

St. Paul Park

CERTIFIED MAIL: 9171 9690 0935 0093 2022 72

April 28, 2017

Air Quality Tracking Coordinator Compliance Determination Unit Air Quality Division Minnesota Pollution Control Agency 520 Lafayette Road North St. Paul, Minnesota 55155-4194 **USEPA** Region 5

MAY 0 4 2017

Office of the Regional Administrator

RE: Complete First Quarter 2017 Excess Emission and CEM Report

St. Paul Park Refining Co. LLC AQD Facility ID No: 16300003 AQD File No: 0203 (AI ID 447)

Dear Sir/Madam:

St. Paul Park Refining Co. LLC is providing the Minnesota Pollution Control Agency (MPCA) with the Excess Emission and Continuous Emissions Monitor (CEM) Downtime Report for 1st Quarter 2017. A previous version of this report was sent dated April 25, 2017; however, the narrative portion of the report was missing. Attached is the complete report.

Please contact me at (651) 769-6766 if you have any questions or if you need additional information.

Respectfully

Shannon R. Lian

Environmental Supervisor

St. Paul Park Refining Co. LLC

Enclosures

cc: Patrick Foley (EPA) w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2022 89 USEPA c/o Matrix w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2022 96 Ms. Jennifer Carlson (MPCA) w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2023 02 Ms. Cheryl Newton (EPA) w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2023 19



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April 25, 2017

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RE: First Quarter 2017 Excess Emission and CEM Report

St. Paul Park Refining Co. LLC AQD Facility ID No: 16300003 AQD File No: 0203 (AI ID 447)

Dear Sir/Madam:

St. Paul Park Refining Co. LLC is providing the Minnesota Pollution Control Agency (MPCA) with the Excess Emission and Continuous Emissions Monitor (CEM) Downtime Report for 1st Quarter 2017.

Please contact Shannon Lian at (651) 769-6766 if you have any questions or if you need additional information.

Respectfully,

Richard Hastings

Vice President and Refinery Manager

St. Paul Park Refining Co. LLC

Enclosures

cc: Patrick Foley (EPA) w/report – CERTIFIED MAIL: 9171 9690 0935 0089 4333 07
 USEPA c/o Matrix w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2021 80
 Ms. Jennifer Carlson (MPCA) w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2021 97
 Ms. Cheryl Newton (EPA) w/report – CERTIFIED MAIL: 9171 9690 0935 0093 2022 03

First Quarter 2017 Excess Emission and CEM Report

St. Paul Park Refining Co. LLC

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Appendix B Quarterly CGA Results

Cylinder Gas Audits/Internal Calibration Error Tests Conducted. All CGAs passed

January 9, 2017	EQUI4	#2 Crude 2-B-3 (O ₂)/ (NO _X)
January 9, 2017	EQUI14	HDH 32-B-1 $(NO_X)/(O_2)$
January 10, 2017	EQUI33	#3 SRU (O ₂)/ (SO ₂)
January 10, 2017	EQUI16	#2 SRU (O ₂)/ (SO ₂)
January 11, 2017	EQUI44	Heater 8-B-1(NO_x)/(O_2)
January 17, 2017	EQUI28	VRU (TOC as Propane)
January 18, 2017	EQUI328	WWTP Thermal Oxidizer (H ₂ S)
January 24, 2017	EQUI2	FCC Opacity
February 3, 2017	COMG7	Fuel Gas Balance Drum (Reformer) (H ₂ S)
February 6, 2017	TREA13	#1 Flare (H2S)
February 6, 2017	TREA13	#1 Flare (SO2)
February 6, 2017	EQUI2	$FCC (O_2)/ (SO_2)/ (CO)/ (CO_2)/ (NO_x)$

NIST -Traceable Opacity Filter Certifications

Relative Accuracy Test Audits (RATA) - Please see below. All RATA's passed.

February 14, 2017	EQUI42	Boiler #7 $(O_2)/(NO_x)/(CO)$
February 14, 2017	EQUI43	Boiler #8 $(O_2)/(NO_x)/(CO)$
February 15, 2017	EQUI2	FCC Regenerator (O ₂ /CO ₂ /NOx/CO/SO ₂)
February 16, 2017	EQUI33	#3 SRU (O ₂)/ (SO ₂)

Section 1

Report Certification

Certification for First Quarter 2017 CEM Excess Emission and CEM Downtime Report

As of September 15, 2016, Western Refining Terminals, LLC, assumed ownership of certain assets associated with the St. Paul Park Refinery. This change in ownership is reflected in an administrative amendment submitted to MPCA originally on September 21, 2016 with a revised submittal provided on November 15, 2016. A separate certification is provided by Western Refining Terminals, LLC as co-permittee for those assets.

This section of the report serves as the St. Paul Park Refining Co. LLC written certification of the information contained within this report. This certification is comprehensive of the entire report and replaces the need for certification of each of the Excess Emissions and CEM Reporting Forms.

St. Paul Park Refining Co. LLC

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

 $\frac{4/25/2677}{\text{Date}}$

St. Paul Park Refining Co. LLC

Richard Hastings, Vice President and Refinery Manager

Certification for First Quarter 2017 CEM Excess Emission and CEM Downtime Report – VRU (EQUI028) and VCR (COM028)

As of September 15, 2016, Western Refining Terminals, LLC, assumed ownership of certain assets associated with the St. Paul Park Refinery. This change in ownership is reflected in an administrative amendment submitted to MPCA originally on September 21, 2016 with a revised submittal provided on November 15, 2016 This change in ownership is reflected in an administrative amendment submitted to MPCA on November 15, 2016. Pursuant to that amendment and the associated change in ownership, this certification is provided by Western Refining Terminals, LLC as co-permittee for those assets now owned and operated by Western Refining Terminals, LLC.

This section of the report serves as the Western Refining Terminals, LLC written certification of the information contained within this report. This certification is comprehensive of the entire report and replaces the need for certification of each of the Excess Emissions and CEM Reporting Forms.

Western Refining Terminals, LLC

Based on the information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

Western Refining Terminals, LLC

Matthew L. Yoder, Senior Vice President Operations

Data

Section 2 Report Summary

1st Quarter 2017 - Percent Excess Emissions and CEM Downtime Summary				
Source Description	Excess Emission Percent Time Exceeded This Quarter (1)	Continuous Monitor Downtime Percent This Quarter (2,3)		
Refinery Fuel Gas Drum (H2S ppmv, 3-hr rolling ave)	0.00%	0.56%		
Refinery Fuel Gas Drum (H2S ppmv, 365-day rolling ave)	0.00%	0.56%		
Heater 28-B-1 (lb SO2/mmbtu, 3 hr average)	0.00%			
Heater 28-B-1 (lb SO2/hr, 3 hr average)	0.00%			
Heater 28-B-1 fuel gas flow meter		0.42%		
Heater 28-B-1 fuel oil flow meter		0.00%		
FCC Opacity	0.01%	0.51%		
FCC CO (ppm)	0.14%	0.69%		
FCC NOx (ppm - 365 day rolling average)	0.00%	0.69%		
FCC NOx (ppm - 7 day rolling average) FCC SO2 (ppm - 7 day rolling average)	0.00%	0.69%		
FCC SO2 (ppm - 365 day rolling average)	0.00%	0.69%		
FCC SO2 (lb/hr)	0.00%	0.69%		
FCC SOx (1b/1000 lb coke burn)	0.00%	0.69%		
Heater 5-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 5-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 5-B-1 fuel gas flow meter		0.42%		
Heater 5-B-1 fuel oil flow meter		0.00%		
Heater 2-B-3 (lbs SO2/hr, 3-hr rolling ave)	0.00%	0.42%		
Heater 2-B-3 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 2-B-3 (lbs NOx/mmbtu, 3-hr rolling ave)	0.00%	0.56%		
Heater 2-B-3 (lbs NOx/mmbtu, 12-Month rolling ave)	0.00%	0.56%		
Heater 2-B-3 NSP fuel gas flow meter		0.42%		
Heater 2-B-3 Fuel Gas flow meter		0.42%		
Heater 2-B-3 NOX/O2 CEM		0.56%		
Heater 1-B-5 (lbs SO2/hr, 3-hr rolling ave) Heater 1-B-5 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 1-B-5 (IBS 502/MIMStd, 5-III TOTTING dve/	0.00%	0.42%		
Heater 1-B-7 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 1-B-7 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 1-B-7 fuel gas flow meter		0.46%		
Heater 1-B-7 fuel oil flow meter		0.00%		
Heater 29-B-1/29-B-2 (lbs SO2/hr, 3-hr rolling ave)	0.00%	~~~		
Heater 29-B-1/29-B-2 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 29-B-1/29-B-2 fuel gas flow meter		0.00%		
Heater 3-B-1/2/3 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 3-B-1/2/3 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 3-B-1/2/3 fuel gas flow meter		0.00%		
Heater 3-B-4 (lbs SO2/hr, 3-hr rolling ave) Heater 3-B-4 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 3-B-4 fuel gas flow meter	0.00%	0.00%		
Heater 3-B-7 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 3-B-7 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%	* * *		
Heater 3-B-7 fuel gas flow meter		0.00%		
Heater 3-B-8 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 3-B-8 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 3-B-8 fuel gas flow meter		0.00%		
Heater 34-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 34-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 34-B-1 fuel gas flow meter		0.00%		
Heater 34-B-2 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 34-B-2 (lbs SO2/mmbtu, 3-hr rolling ave) Heater 34-B-2 fuel gas flow meter	0.00%	0.00%		
Heater 34-B-2 fuel gas flow meter		0.00%		
Heater 32-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 32-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 32-B-1 fuel gas flow meter		0.09%		
Heater 32-B-1 (NOx lb/mmbtu, 365 day rolling ave)	0.00%	0.09%		
Heater 10-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%			
Heater 10-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%			
Heater 10-B-1 fuel gas flow meter		0.00%		
Heater 10-B-1 fuel oil flow meter		0.00%		

1st Quarter 2017 - Percent Excess Emissions and CEM Downtime Summary			
Source Description	Excess Emission Percent Time Exceeded This Quarter (1)	Continuous Monitor Downtime Percent This Quarter (2,3)	
#2 SRU/SCOT SO2/O2 (ppmv, 12-hr ave)	0.00%	0.60%	
#2 SRU/SCOT SO2/O2 (lbs/hr, 1-hr ave)	0.00%	0.60%	
#2 SRU/SCOT SO2/O2 (lbs/hr, 3-hr rolling ave)	0.00%	0.60%	
#2 SRU/SCOT bypasses	0.00%		
Heater 36-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%		
Heater 36-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heater 36-B-1 fuel gas flow meter		0.00%	
Heater 36-B-2, 3, and 4 (lbs SO2/hr, 3-hr rolling ave)	0.00%		
Heater 36-B-2, 3, and 4 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heater 36-B-2, 3, and 4 fuel gas flow meter		0.00%	
Heater 36-B-6E (lbs SO2/hr, 3-hr rolling ave) Heater 36-B-6E (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heater 36-B-6E fuel gas flow meter	0.00%	0.05%	
Heater 36-B-6W (lbs SO2/hr, 3-hr rolling ave)	0.00%		
Heater 36-B-6W (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heater 36-B-6W fuel gas flow meter		0.05%	
Heater 37-B-1 (lbs SO2/hr, 3-hr rolling ave)	0.00%		
Heater 37-B-1 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heater 37-B-1 fuel gas flow meter		0.00%	
Heater 37-B-2 (1bs SO2/hr, 3-hr rolling ave)	0.00%		
Heater 37-B-2 (lbs SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heater 37-B-2 fuel gas flow meter		0.00%	
Heaters 38-B-1, 38-B-2 (lb SO2/hr, 3-hr rolling ave)	0.00%		
Heaters 38-B-1, 38-B-2 (lb SO2/mmbtu, 3-hr rolling ave)	0.00%		
Heaters 38-B-1, 38-B-2 NSP Gas flow meter		0.00%	
Heaters 38-B-1, 38-B-2 PSA fuel gas flow meter Light oil Loadrack VRU (TOC ppmv, 6-hr average)	0.00%	0.00%	
right oil loadrack- VRU (loc ppmv, 5-hr average) light oil loadrack- Permanent VCU (Limit = Temp ≥215 deg F, 3-hr rolling ave)	0.00%	0.00%	
Refinery flare (presence of pilots)	0.00%	0.08%	
Refinery flare (MMSCF/24-hours)	0.00%	0.00%	
Refinery flare - SARA Reportable emissions - SO2	0.00%	1.85%	
Refinery flare - SARA Reportable emissions - NOx	0.00%		
Refinery flare - H2S (3-hour rolling average)	3.33%	1.81%	
N.W.T.P. SBC Offgas (H2S ppmv, 365-day rolling ave)	0.00%	0.00%	
W.W.T.P. Thermal Oxidizer, SBC Offgas (Temp Deg. F, 3-hr rolling ave)	0.00%	0.00%	
W.T.P. Thermal Oxidizer, NESHAP Offgas (Temp Deg. F, 3-hr rolling ave)	0.00%	0.00%	
3 SRU/SCOT S02/02 (ppmv, 12-hr ave)	0.00%	0.46%	
3 SRU/SCOT S02/02 (lbs/hr, 1-hr ave)	0.00%	0.46%	
3 SRU/SCOT SO2/O2 (lbs/hr, 3-hr rolling ave)	0.00%	0.46%	
3 SRU/SCOT Bypasses	0.00%		
NP VEPR Phase 1 - Catalytic AB w/Heat Exchg (Temp, 3-hr rolling ave) NP VEPR Phase 2 - Catalytic AB w/Heat Exchg (Temp, 3-hr rolling ave)	0.00%	0.00%	
Soiler 7 NOx (lb/MMBtu, 30 day rolling ave)	0.00%	0.42%	
Soiler 7 SO2 (lb/MMBtu, 3-hr rolling ave)	0.00%		
Boiler 7 fuel gas flow meter		0.42%	
Soiler 8 NOx (lb/MMBtu, 30 day rolling ave)	0.00%	0.42%	
Boiler 8 SO2 (lb/MMBtu, 3-hr rolling ave)	0.00%		
Boiler 8 fuel gas flow meter		0.42%	
Heater 8-B-1 (lb SO2/mmbtu, 3-hr average)	0.00%		
Heater 8-B-1 (lb SO2/hr, 3-hr average)	0.00%		
Neater 8-B-1 (ppmvd, 30-day average)	0.00%	0.46%	
leater 8-B-1 fuel gas flow meter		0.42%	
PP 032 CO (TPY, Combined 12-month Rolling Sum)	0.00%		
Boiler 7 CO (TPY, Combined 12-month Rolling Sum w/ Boiler 8) Boiler 8 CO (TPY, Combined 12-month Rolling Sum w/ Boiler 7)		0.42%	
P 032 NOx (TPY, Combined 12-month Rolling Sum)		0.42*	
Boiler 7 NOx (TPY, Combined 12-month Rolling Sum w/ Boiler 8)	0.00%	0.42%	
Boiler 8 NOx (TPY, Combined 12-month Rolling Sum w/ Boiler 7)		0.42%	
Notes: (1) 0.00% indicates No Excess Emissions.			
(1) 0.00% indicates No Excess Emissions. (2) Monitor Downtime includes daily calibration checks for opacity.			
(2) MONITOR DOWNERING INCLUDES GATTY CATEDIALION CHECKS FOR OPACITY.			

Excess Emissions Summary First Quarter 2017

Excess Emissions Summary

Incident A – FCC Oxygen Skid Trip Due to Loss of Linde Plant, FCC CO, Opacity and Flare H₂S Exceedances

On January 6, 2017, at 2:22 PM purchased oxygen from the Linde Plant primary supply system shutdown suddenly. The back-up oxygen supply system kicked-in briefly, and the FCC Console Operator began corrective actions immediately, including cutting rate and increasing blower air to the regenerator. At 2:27 PM the Linde back-up system also failed. Operators continued corrective actions. The unit was brought back in-line at approximately 4:40 PM. Linde oxygen was reliably brought back on January 8, 2017 at approximately 6 PM. FCC Carbon monoxide (CO) emissions exceeded the 1-hr average for 3 hours, opacity excursions occurred for 18 minutes and the flare emissions exceeded the H₂S limit for 3 hours. There was no exceedance of the flare 500 lbs. SO₂ /24-hour or 1.31 mmscf/24-hour flare vent gas work practice standard.

Operator actions were consistent with FCC Emergency Operations Procedure for Loss of the Purchased O2. Corrective actions made by the console operator included, increasing blower air, cutting feed, increasing charge heater outlet temperature, adding promoter, and reducing resid rate. The root cause was failure of sole sourced outside suppler (i.e., Linde) to provide material necessary for reliable production of products. The incident will be reviewed with Linde to determine actions taken by the supplier to ensure reliability of their back-up systems.

Since measured CO data points are not verifiable or accurate when 50% greater than the high calibration gas concentration, a value of 1,332.0 ppm (1.5 times the daily span calibration gas concentration of 888.0 ppm CO) was substituted for all greater data points. The recalculated and verifiable value is provided in the last column of the table. SPPRC believes these periods to be exempt under SSM provisions of the regulations and is providing the data for informational purposes only.

Periods Over 500 ppm CO @ 0% O ₂ 1- hour Avg.	Date and End Time	Measured 1-Hour Avg. (ppm CO)	Verified 1-hour Avg. (ppm CO)
1	1/06/17 15:00	1221	690
2	1/06/17 16:00	1058	1063
3	1/06/17 17:00	1026	815

Periods over 30% Opacity (Running total)	Periods over 30% Allowed (Runnin g total)	Date and End Time	6-minute Average Opacity (% opacity)	Startup, Shutdown, Malfunction, Allowed or Exceedance	Inlet Cyclone Velocity, (fps)
1	1	1/06/17 15:12	31.5	Allowed	
2		1/06/17 15:18	30.8	SSM	61.3
3		1/06/17 15:24	36.1	SSM	61.1
4		1/06/17 15:30	35.5	SSM	62.2

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
1	1/06/17 17:00	676
2	1/06/17 18:00	688
3	1/06/17 19:00	633

Incident B - Exceedance of Flare 3-hr H2S Limit

On January 11, 2017, the Blending Board noted an increase in H_2S in the flare and increased the amount of flare H_2S scavenger ("Sulfix"). However, the valve for the supplemental natural gas that carries the Sulfix to the flare was closed. The Board instructed an operator to open the natural gas supply valve. The operator opened the natural gas supply valve at ground level but did not realize the overhead natural gas supply gas valve was also closed. When the Board realized natural gas was still not flowing, additional instruction was provided to the operator to open the overhead natural gas supply valve. When the main natural gas supply valve was opened, the Sulfix reduced flare $H_2S < 162$ ppm.

At the time of the incident, the flare high H2S troubleshooting guide was used to identify a source of high H₂S. No equipment was known to be venting to the flare due to start-up, shutdown, or malfunction. Although an incident investigation was completed, the source of the high H₂S to the flare is unknown.

If the Blending Board had been successful in increasing the amount of Sulfix to the flare when the high H₂S was noted, the flare 3-hr H₂S limit would not have been exceeded. The root cause of the incident was the operator's lack of awareness that the main natural gas supply valve was closed. To ensure the supplemental natural gas remains in an open position in the future, a car seal will be used. SPPRC is continuing to learn how to optimize the use of the Sulfix to control high H₂S flare events.

There was no exceedance of the flare 500 lbs. SO_2 /24-hour or 1.31 mmscf/24-hour flare vent gas work practice standard. SPPRC believes these periods to be exempt under SSM provisions of the regulations and is providing the data for informational purposes only.

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
1	1/11/17 08:00	221
2	1/11/17 09:00	283
3	1/11/17 10:00	229

Incident C – Flare H2S Exceedances Due to Trips on Crude Main Tail Gas Compressor Due to Low Oil Pressure and Repairs

Low Oil Gas Pressure Trips #1 & #2

On February 6, 2017, the Board Operator received an alarm that the crude main tail gas compressor tripped. Shortly after the trip, the pilot relief valve opened to the flare as required for safety and protection of the equipment. Troubleshooting by the operator determined there was no oil pressure on the local compressor gauge. The auxiliary oil pump was switched on manually and oil pressure was restored to the compressor. The auxiliary oil pump should automatically turn on any time low oil pressure is detected on the compressor but failed to do so at the time of the trip. Plans were made to shutdown the compressor on February 7th to determine the cause of the compressor low oil pressure and the reason the auxiliary oil pump did not switch on automatically.

On February 7, 2017, following compressor shutdown, maintenance determined that repairs were needed to the main tail gas compressor oil pump and that the reason the auxiliary pump did not switch on automatically was due to a PLC issue. If the auxiliary pump would have switched on automatically, a low pressure situation would not have occurred and the compressor trip would have been avoided. Initial repairs were made to the main oil pump and plans were made to perform more extensive troubleshooting during upcoming compressor major maintenance, scheduled for February 23, during which the control PLC was scheduled for replacement. In the interim, the auxiliary pump was set to run continuously vs. stand-by to maintain oil pressure when the main tail gas compressor was placed back on-line until the scheduled outage on February 23rd.

On February 17, 2017, low oil pressure was detected again on the main tail gas compressor and the compressor automatically shut down for safety and protection of the equipment. The auxiliary oil pump was in an automatic position but was unable to respond when low oil pressure was detected. There was no control panel or DCS indication that the auxiliary pump was running or stopped. Due to the shutdown of the compressor, sour gas was flared for approximately 16 minutes until the compressor was restarted and the flaring stopped. Immediate corrective actions included reestablishing the oil pressure and restart of the main tail gas compressor.

Even though repairs were made to the main oil pump on February 7th, additional troubleshooting following the second trip identified incorrect pump rotation as the cause of the low oil pressure that led to the compressor trips on February 6th and February 17th.

During the scheduled outage on February 23rd, the new PLC for the auxiliary oil pump was installed. As an additional preventive measure, an indicator for the auxiliary oil pump will be installed to alert operations when the auxiliary pump is running/not running. Direct measurement of pump status will enhance situation awareness and troubleshooting for future compressor trip events. During the week February 27th to March 2nd, the repairs to the pump rotation were completed.

There was no exceedance of the flare 500 lbs. SO₂ /24-hour or 1.31 mmscf/24-hour flare vent gas work practice standard for the events on February 6th or February 17th. SPPRC believes these periods to be exempt under SSM provisions of the regulations and is providing the data for informational purposes only.

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
1	2/06/17 08:00	362
2	2/06/17 09:00	381
3	2/06/17 10:00	387

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
1	2/17/17 13:00	463
2	2/17/17 14:00	541
3	2/17/17 15:00	545

Shutdown of Crude Main Tail Gas Compressor, Purging High H₂S

On February 7, 2017, to determine the cause of the low oil pressure trip of the main tail gas compressor and failed automatic start-up of the auxiliary oil pump, operations switched from the main tail gas compressor to the back-up tail gas compressor in order to perform inspection and maintenance. While purging the main tail gas compressor to the flare to prepare for maintenance, flare H₂S exceeded the 3-hour rolling average 162 ppm limit. To prepare for the purging, the flare H₂S ("Sulfix") scavenger was increased at the HDH injection point and not the main flare injection point which would have provided more immediate control for increased H₂S emissions from purging of the main tail gas compressor. The root cause of the H2S exceedance on February 7, 2017 was due to the flare troubleshooting guide not providing specific timing or introduction of the scavenger prior to the beginning of compressor purging or guidance on which of the flare scavenger points to engage first, depending on the source of the high H2S. To ensure use of the main flare injection point for Crude Unit events in the future, the flare troubleshooting guide was updated to include a step for starting scavenger injection proactively and include length of time to wait before beginning sweep and which injection location should be used (i.e., main flare injection point). As mentioned previously, SPPRC is continuing to learn how to optimize the use of the Sulfix to control high H₂S flare events.

There was no exceedance of the flare 500 lbs. SO₂ /24-hour or 1.31 mmscf/24-hour flare vent gas work practice standard for the events on February 7th. SPPRC believes these periods to be exempt under SSM provisions of the regulations and is providing the data for informational purposes only.

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
1	02/07/17 21:00	181
2	02/07/17 22:00	175
3	02/07/17 23:00	165

Incident D - Exceedance of Flare 3-hr H2S Limit

On February 8th, the Blending Board reported increased H₂S to the flare. Operations initiated troubleshooting procedures, and maximized Sulfix (i.e., flare H₂S scavenger) addition to the flare. Operations proceeded with a series of troubleshooting efforts to identify the source of H₂S in the flare over the period of 2/8-2/10 by engaging and dedicating representatives from Technical Services, Operations, Laboratory and Environmental Departments.

From February 8-9th, efforts focused on the Crude Unit due to the high H₂S event that occurred on 2/7/17. Tail gas compressors were switched from the back-up to the main tail gas compressor. Operations then started a process of isolated various components that vent to the flare in the DU and Sat Gas Units to identify changes in flare flow. There was no change in flare H₂S after these actions were taken. Sampling of flare gas header legs (e.g., FCC Alky, Sat Gas, Penex, HDH, and DDS) was conducted with the investigation focused on the HDH and DDS Units. Repeat sampling eliminated the DDS Unit as a source. The dry HDH header was then confirmed as the source of high H₂S. Investigation and sampling of individual sources in the HDH started.

From February 9-10th, troubleshooting continued and subsequent sampling and flare indications showed falling H_2S . At 5:00 pm on February 10^{th} , the 3-hr flare H_2S rolling average was ≤ 162 ppm. High H_2S was originating from a source that vents to the HDH dry header (e.g., compressor knock out drum and > 10 pilot process safety valves). A specific source could not be determined because the H_2S levels had returned to normal levels at the flare and in the flare headers.

As a result of this event, the Refinery procedure for troubleshooting high H₂S in the flare was updated to require steps to check each primary flare header leg for H₂S during an event to ensure a quick response and H₂S source identification during future flare high H₂S events.

There was no exceedance of the flare $500 \text{ lbs. } SO_2$ /24-hour or 1.31 mmscf/24-hour flare vent gas work practice standard. SPPRC believes these periods to be exempt under SSM provisions of the regulations and is providing the data for informational purposes only.

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
1	02/08/17 09:00	398
2	02/08/17 10:00	1203
3	02/08/17 11:00	1938
4	02/08/17 12:00	2291
5	02/08/17 13:00	2182
6	02/08/17 14:00	2058
7	02/08/17 15:00	1909
8	02/08/17 16:00	1753
99	02/08/17 17:00	1664
10	02/08/17 18:00	1640
11	02/08/17 19:00	1670
12	02/08/17 20:00	1776
13	02/08/17 21:00	1898
14	02/08/17 22:00	2009
15	02/08/17 23:00	2083
16	02/09/17 00:00	2171
17	02/09/17 01:00	2230
18	02/09/17 02:00	2275
19	02/09/17 03:00	2313
20	02/09/17 04:00	2395
21	02/09/17 05:00	2471
22	02/09/17 06:00	2459
23	02/09/17 07:00	2306
24_	02/09/17 08:00	2123
25	02/09/17 09:00	1932
26	02/09/17 10:00	1823
27	02/09/17 11:00	1675
28	02/09/17 12:00	1652
29	02/09/17 13:00	1594
30	02/09/17 14:00	1508
31	02/09/17 15:00	1328
32	02/09/17 16:00	1165
33	02/09/17 17:00	1068
34	02/09/17 18:00	987
35	02/09/17 19:00	931
36	02/09/17 20:00	884
37	02/09/17 21:00	856
38	02/09/17 22:00	817
39	02/09/17 23:00	793
40	02/10/17 0:00	769
41	02/10/17 01:00	751
42	02/10/17 02:00	729

Periods Over 162 ppm H ₂ S, 3-hour Avg.	Date and End Time	Measured 3- Hour Avg. (ppm H ₂ S)
43	02/10/17 03:00	716
44	02/10/17 04:00	705
45	02/10/17 05:00	695
46	02/10/17 06:00	684
47	02/10/17 07:00	679
48	02/10/17 08:00	678
49	02/10/17 09:00	663
50	02/10/17 10:00	643
51	02/10/17 11:00	625
52	02/10/17 12:00	617
53	02/10/17 13:00	582
54	02/10/17 14:00	516
55	02/10/17 15:00	419
56	02/10/17 16:00	310
57	02/10/17 17:00	206

SARA Reportable Release Summary

There were no SARA reportable releases during 1st quarter 2017.

SBC/BWON Vent Gas System

During the 1st quarter of 2017, BWON vent gasses were bypassed around the WWTP TO and associated temperature monitor 4.4% percent of the time or 94.6 hours. Troubleshooting has been on-going since 4QTR2016 and determined that hydrocarbons were flashing when desalter brine was diverted to the WWTP Surge Pit during mud washing. Level swings in the Surge Pit was transferring rich, combustible hydrocarbon vapors from the Surge Pit to the Thermal Oxidizer (TO). The TO would either trip on high stack temperature or loss of flame. The desalter brine exchangers were cleaned which has reduced the amount of rich combustibles carried over to the TO and related trips. An alarm will also be established to alert operators to high desalter brine temperature so action can be taken.

Monitor Bypass Summary

There were no monitor bypasses during the 1st quarter 2017.

SRU Bypass Summary

There were no SRU bypasses during the 1st quarter 2017.

1B5 Corruption of Flow Data

From February 13, 2017 – March 30, 2017, fuel gas flow data for 1B5, PI tag 1FC16.pv, was corrupted within the Refinery's Distributed Control System (DCS). Data for the 1B5 fuel gas control valve (1FC16.op) and set point (1FC16.sp) were both available to demonstrate the flow meter was operational for the period in question. For each reading, the set point (1FC16.sp) is compared to the flow meter reading (1FC16.pv). The set point value recorded is updated to reflect the actual flow meter reading. A record of the fuel gas readings is available from the set point data.

Section 3 Excess Emissions and CEM Reporting Forms

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOx	со	CO2	02	TRS	H2S	НСІ	-	Opacity
REPORTING QUARTER:	First, 2017		****		MONITOR MODEL:	_Vista_:	2020 GC			
FACILITY: St. Paul Park Ref	ining Co. LLC			-	MFR:	Combus	tion Engi	neering	Ĭ	
EMISSION SUBJECT ITEM:	COMG7	- <u> </u>		-	EMISSION I	162 pp	m H2S - 3	hr rol	ling	average ng average
EMISSION UNIT(S):	Refinery fuel gas	system	.	-	EMISSION I	BASIS:	40 CFR NSPS Su		a	
ASSOCIATED ITEMS: EQUI1, EQUI3, EQUI4, EQUI5, EQUI6, EQUI7, EQUI8, EQUI9, EQUI10, EQUI11, EQUI12, EQUI13, EQUI14, EQUI15, EQUI17, EQUI18,										
EQUI19, EQUI20, E	QUI21, EQUI26, , E	QUI326, EQU	123, EQU	[24, E	QUI33, EQ	UI42, EÇ	QUI43, an	d EQUI4	4.	
NOTE: H2S limits within	40 CFR 60 Subp. C	a only appl	y to EQU	[42, E	OUI43, and TOTAL OPE OF EMISSIO	ERATING			2160	
A. EMISSION DATA SUMMARY					B. CEM PE	REORMA	NCE SUMN	IARY		
1 DURATION OF EXCE: a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (H 3 PERCENT OF TOTAL EXCESS EMISSIONS	3	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	365-day 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	-	1	1 DURATI SOURC a) Monit b) Non-r c) QA ca d) Other e) Unknot 2 TOTAL 3 PERCEI CEM DO	ON OF CEME OPERATION malfunction malfunction known causes DURATION NT OF TOT.	M DOWN' ION (HRS) ion function sees i (HRS)	- - - - - -	0.00 0.00 2.00 10.00 0.00
% Total Excess Emissions = % Total CEM Downtime = NOTES:		Total Duration CEM Downtime			•	perating T	Time - CEM	Downtime	e)	
If no exceedances: I certify that the exceedances during the reporting p SUBMITTED BY:		familiar with th	e information	on in thi						

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		Refinery fuel gas s	ystem
POLLUTANT MONITORED:		H2S	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (ppm, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.	
Total b) Control equipment 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
c) Process problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017 AQD FILE# #0203 (AI ID 447)	
EMISSION UNIT(S):		Refinery fuel gas system	
POLLUTANT MONITORED:		H2S	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (ppm, 365-day average) CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
Total	0.00		
d) Other known causes 1/1/2017 4/1/2017 ₋ Total	0.00	_No excess emissions.	
iotai	0.00		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	TO ONOGO OTHIOGISTIS.	
g) Fuel problems 1/1/2017			
4/1/2017 _	0.00	_No excess emissions.	
I otal	(1 (11)		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		Refinery fuel gas system	
POLLUTANT MONITORED:		H2S	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
_	0.00	_	
Total	0.00		
b) Non-monitor malfunction			
a, non monte management			
÷	0.00	_	
Total	0.00		
c) QA calibration			
2/3/2017 8:00			
2/3/2017 10:00	2.00	Quarterly calibration audit.	
Total	2.00		
d) Other known causes			
1/17/2017 16:00			
1/17/2017 22:00	6.00	Disconnection of air supply line to analyzer.	Connection repaired and analyzer flame was relit.
1/31/2017 9:00			
1/31/2017 11:00	2.00	Data communications issue.	
2/8/2017 9:00			
2/8/2017 11:00	2.00	Maintenance completed on sample line.	
_			
Total	10.00	-	
e) Unknown causes			
	0.00		
Total	0.00	-	•

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOx Flow	со	CO2	02	TRS	H2S	HCL	Opacity	
REPORTING QUARTER:	First, 2017			- -	MONITO MODEL MFR:		Flow R	ate/FG H28	S CEM	
FACILITY: St. Paul Park Re	efining Co. LL	2		- -	WII IX.					
EQUI1				_	EMISSI		SO2/hr	- 3 hour	rolling ave	
EMISSION UNIT(S):	Alkylation Heater 28-B-	-1		_ _	EMISSI	ON BASIS:		SIP for S	SO2 NAAQS	
ASSOCIATED ITEMS:	COMG7, EQUI	63, EQUI173	3, STRU4	7, COMG20		_				
NOTE: There was zero f	Tuel oil runtin	ne during th	ne quart	er.						
					OPERA	TING HOUF	RS OF EM	IISSION UNI Total	T: Fuel Gas	Fuel Oil
								2160	2160	o 0
					1					
A. EMISSION DATA SUMMAI		UDO)				l Performan			E DUDING	· · · · · · · · · · · · · · · · · · ·
DURATION OF EXCI	ESS EMISSIONS (HRS)	lb/hr	lb/mmbtu	1			A DOWNTIM	E DURING	
a) Startup/Shutdown			0.00	0.00	ŀ	SOURCE	OPERAII	ON (HRS)	Fuel Gas	Fuel Oil
b) Control equipment			0.00	0.00	1	a) Monitor	malfunctio	าก	0.00	0.00
c) Process problems		_	0.00	0.00	i	b) Non-mo			0.00	0.00
d) Other known cause	es.		0.00	0.00	1	c) QA calib			0.00	0.00
e) Unknown causes		_	0.00	0.00	1	d) Other kr		ses	9.00	0.00
f) Soot blowing		_	0.00	0.00	1	e) Unknow			0.00	0.00
g) Fuel problems			0.00	0.00	1	-,				
2 TOTAL DURATION (HRS)	_	0.00	0.00	1 :	2 TOTAL DU	JRATION	(HRS)	9.00	0.00
3 PERCENT OF TOTA	,	_	0.00		٦	3 PERCENT				0.00
EXCESS EMISSIONS		_	0.00%	0.00%	<u> </u>	CEM DOV			0.42%	0.00%
	FOR OPACITY,	RECORD ALL	TIMES IN	MINUTES. F	OR GAS	ES, RECOF	RD ALL TI	MES IN HOU	JRS.	
% Total Excess Emissions =		Total Duration o	of Excess I	Emissions / (T	otal Ope	rating Time -	· CEM Dov	wntime)		
% Total CEM Downtime =		CEM Downtime	/ Total Op	perating Time						
NOTES: There was zero f	uel oil runti	me during th	ne quart	er.						
								-		
If no exceedances: I certify that exceedances during the report	at the required analyting period 1 certify	yses were made	e, that I an	n familiar with	the result	ts, and that t	o the best	t of my knowl	edge there were	e no
SUBMITTED BY:	See certific					or and tidt t	.c uie besi	DATE:	loage are injuly	adon io valid.

EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		GP007, EQUI1	_
POLLUTANT MONITORED:		SO2 lb/hr	
DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE CAUSE/CORRECTIVE ACTION	٠
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.	
Total c) Process problems	0.00		
1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 _		_No excess emissions.	
Total	0.00		
g) Fuel problems 1/1/2017 4/1/2017 _		No excess emissions.	
Total -	0.00	_	

EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		GP007, EQUI1	_
POLLUTANT MONITORED:		SO2 lb/mmbtu	
	TOTAL DURATION		
DATE/TIME	(HRS)	MAX. EMISSIONS RATE CAUSE/CORRECTIVE ACTIO	N .
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_	
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
rotar	0.00		
d) Other known causes 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
e) Unknown causes 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
g) Fuel problems			
1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 28-B-1 (EQUI1, GP007)	
POLLUTANT MONITORED:		Fuel Gas Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	_	
b) Non-monitor malfunction			
Total	0.00	_	
c) QA calibration			
Total	0.00	-	
d) Other known causes 1/28/2017 0:00			
1/28/2017 9:00 _ Total	9.00	Communications issue. Missing data.	
e) Unknown causes			
Total -	0.00	-	

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 28-B-1 (EQUI1, GP007)	
POLLUTANT MONITORED:		Fuel Oil Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	_	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	_	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE#: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2	sox	NOx	CO	CO2	02	TRS	H2S	HCL	Opacity
	Other:	Metal HAP	per MACT	Subpar	t טטט					
					MONITOR					
REPORTING QUARTER:	First, 201	.7			MODEL:	440				
				_	MFR:	~~~~	Electron	Corporati	on	
FACILITY:										
St. Paul Park Re	efining Co.	LLC		_						
					EMISSION L	IMITS AND A	VERAGINO	TIME:		
EMISSION SUBJECT ITEM:	EQUI2			_				ept for o		
						minute p	period in	any one	hour (1)	
5.000.00.00.00										
EMISSION UNIT(S):	FCC regene	rator			EMISSION B					
								5, subp.	1, Item B	
ACCOUNTED ITEMS.						40 CFR	63.1564		•	
ASSOCIATED ITEMS:	EQUI164, T	REAL7								
PROCESS UNIT DESCRIPTION	ON:	FORTS is a	nnrovimat	elv s	30,500 bpd	fluidired	catalisti	a araakin	a unit	
TROCESS ONLY DESCRIP II	OIV.				C are route					
		THE MACELL	als IIOm	che re	TOTAL OPE			ur ror rra	iccionacion.	
					OF EMISSIO		UINO	2160		
					or Emiliono			2100	•	
A. EMISSION DATA SUMMAI	RY				B. CEM PER	FORMANCE	SUMMAR	Y		1
1 DURATION OF EXC	ESS EMISSION	IS (MIN)				1 DURATIO	N OF CEM	DOWNTIME	DURING	
a) Startup/Shutdown		,	0.00	_		SOURCE	OPERATIO	N (MIN)		
b) Control equipment			0.00	_		a) Monitor	malfunction	1	0.00	
c) Process problems			0.00	_	1	b) Non-mo	onitor malfur	nction	0.00	
d) Other known cause	es		18.00	_	İ	c) QA cali	bration		648.00	
e) Unknown causes			0.00	_		d) Other k	nown cause	:\$	8.50	
f) Soot blowing			0.00			e) Unknov	vn causes		0.00	
g) Fuel problems			0.00	_						
2 TOTAL DURATION ((MIN)		18.00			2 TOTAL D	URATION (I	MIN)	656.50	
3 PERCENT OF TOTA	\L					3 PERCEN	T OF TOTA	L		:
EXCESS EMISSION	S		0.01%	_		CEM DOV	NNTIME		0.51%	
1	FOR OPACIT	Y, RECORD A	ALL TIMES I	UNIM P	TES. FOR GA	SES, RECO	RD ALL TIM	IES IN HOU	RS.	
% Total Excess Emissions =		Total Duration	1 of Excess E	Emissior	ns / (Total Oper	rating Time -	CEM Down	time)		
% Total CEM Downtime =		CEM Downtin	ne / Total Op	erating	Time					
NOTES: (1) According to	o MN Rules 7	011.1405. S	ubpt. 1.	B and	MACT II. ar	exceedan	ce of thi	s standar	rd occurs wh	enever
any one-hour per										
As allowed in th										· — · · · · · · · · · · · · · · · · · ·
reported in the										
If no exceedances: I certify the										no exceedances during the
reporting period. I certify that I						oi my knowle	age the info		and.	
SUBMITTED BY:	See certif	ication pag	e at fron	t of r	eport		_	DATE:		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 20	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regen	nerator
POLLUTANT MONITORED:		Opacity	
DATE/TIME	TOTAL DURATION (MIN)		PACITY (%) CAUSE/CORRECTIVE ACTION
		# of 6 min	
a) Startup/Shutdown		periods	(%)
1/1/2017 4/1/2017			No excess emissions.
total	0.00	0	_no excess emissions.
b) Control equipment			
1/1/2017			
4/1/2017			_No excess emissions.
total	0.00	0	
c) Process problems			
1/1/2017			
4/1/2017			_No excess emissions.
total	0.00	0	
d) Other known causes			
1/6/2017 15:12			
1/6/2017 15:30	18.00 18.00		_Please see Incident A in the report summary.
total e) Unknown causes	18.00	0	
e) Offknown causes 1/1/2017			
4/1/2017			No excess emissions.
total	0.00	0	-
f) Soot blowing			
1/1/2017			
4/1/2017			No excess emissions.
total	0.00	0	-
g) Fuel problems			
1/1/2017			
4/1/2017			No excess emissions.
total	0.00	0	

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQDFILE # #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		Opacity	
DATE/TIME	TOTAL DURATION (MIN)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction		•	
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration 1/1/2017 3/31/2017 1/24/2017 13:00 1/24/2017 14:42	546.0 102.0	Daily calibrations. Quarterly audit.	
Total d) Other known causes 1/28/2017 0:30 1/28/2017 9:00	648.0 8.50	Communications issue. Missing data.	
Total e) Unknown causes	8.50	-	
Total	0.00	-	

MINNESOTA POLLUTION CONTROL AGENCY

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	SOX Organic H	NOx C	_		02	TRS	H2S	HCL	Opacity
REPORTING QUARTER:	First, 20	17			ONITOR ODEL:	Advance	Optima (U	ras 14) Gas	Analyzer	
FACILITY: St. Paul Park Refining	Co. LLC		7	M	FR:	ABB				
							/ED + OF TI			
EMISSION SUBJECT ITEM:	EQUI2		.	ᄕ	VIISSION L	MIT AND A' 500 ppmv		WE: r average		
EMISSION UNIT(S):	FCC regen	erator		EN	MISSION E	BASIS:				
								40 CFR 60.1	03 (a)	*
100000000000000000000000000000000000000							3.1565(a)			
ASSOCIATED ITEMS:	EQUI164,	FREA17				40 CFR 6	3, MACT S	ubpart UUU,	Table 8, Opt:	ion 2
PROCESS UNIT DESCRIPTION:		FORTS is	a fluidized	oatalu	tic crac	king unit				
THOOLEGO SHIT BEGONII TION			ials from th					mn for fract	ionation.	
				10 200	<u>, , , , , , , , , , , , , , , , , , , </u>					
				T	OTAL OPE	RATING HO	URS			
				0	FEMISSIC	ON UNIT:	_	2160		
L THE STATE OF THE					0511 051	20011110				
A. EMISSION DATA SUMMARY				B.	CEM PER	RFORMANCI	E SUMMAR	T		
1 DURATION OF EXCESS EMIS	SIONS (HRS)			l		1 DURATIO	N OF CEM D	OWNTIME DU	RING	
a) Startup/Shutdown			0.00				OPERATION			
b) Control equipment			0.00	[malfunction	. (– ,	0.00	
c) Process problems			0.00				nitor malfuni	ction	0.00	
d) Other known causes			3.00	[c) QA calib	oration		0.00	
e) Unknown causes			0.00			d) Other kr	nown causes	5	15.00	
f) Soot blowing			0.00	1		e) Unknow	n causes		0.00	
g) Fuel problems			0.00	1						
2 TOTAL DURATION (HRS)			3.00			2 TOTAL DU	JRATION (H	RS)	15.00	
3 PERCENT OF TOTAL						3 PERCENT	OF TOTAL			
EXCESS EMISSIONS			0.14%			CEM DOM	VNTIME		0.69%	
	FOR OPACI	TY, RECORD	ALL TIMES IN I	MINUTES	FOR G	ASES, RECO	RD ALL TIM	IES IN HOURS		
% Total Excess Emissions =		Total Durati	on of Excess Er	nissions /	(Total Op	erating Time	- CEM Dow	ntime)		
% Total CEM Downtime =		CEM Downt	ime / Total Ope	rating Tin	ne					
NOTES: Actual monitored values are no	ted in this secti	on.								
During excess emission events			ne high calibration	on gas co	ncentratio	n is used to	replace any	analyzer readin	igs over that value	since
measured data points are not v										
for greater detail.										
· ·	certify that I ar	n familiar with	the information	in this re	port and th		t of my know	vledge the infor		lances during the reporting
SURMITTED BY:	See certi	rication pa	age at front	of rep	ort			DATE		

CONTINUOUS EMISSION MONITOR EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AQDFILE# #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		CO and O2	
DATE/TIME	TOTAL DURATION (HRS)	(ppm), hourly average	CAUSE/CORRECTIVE ACTION
	/1/2017 /1/2017	Actual Recalc No excess emissions.	
Total	0.00	_	
	/1/2017 /1/2017 0.00	_ No excess emissions.	
	/1/2017 /1/2017 	_ No excess emíssions.	
d) Other known causes 1 <i>I6I</i> 201 1 <i>I6I</i> 201	7 14:00 7 17:00 3.00	1221 690	Please see Incident A in the summary report.
Total	3.00	-	
	/1/2017 /1/2017 0.00	_ No excess emissions.	
	/1/2017 /1/2017 	_No excess emissions.	
	/1/2017 /1/2017 	_ No excess emissions.	

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUART	ER:		First, 2017	AQD FI	LE#: #0203 (AI ID 447)	
EMISSION UNIT(S):			FCC regenerator		·	
POLLUTANT MONITO	ORED:		CO and O2			
		TOTAL DURATION				
DATE/TIME	<u></u>	(HRS)	CAUSE/CORRECTIVE ACTION			
a) Monitor malfunction	n					
	Total	0.00	-			
b) Non-monitor malfur	nction					
			-			
	Total	0.00				
c) QA calibration						
	Total .	0.00	-			
d) Other known cause	es					
	1/3/2017 16:00 1/3/2017 18:00 1/12/2017 9:00	2.00	Communications issue.			
	1/12/2017 13:00 1/28/2017 0:00	4.00	Preventive maintenance.			
	1/28/2017 9:00	9.00	_Communications issue. Missing data	а.		
	Total	15.00	-			
e) Unknown causes						
	Total	0.00	-			
		00				

								AQD FILE #: #	0203 (AI ID 44	7)
			EXCESS E	EMISSION A	ND CEM F	EPORTING!	FORM			
DOLLAR TANT	200	004	(110)	20	200		TD0	1100	1101	0
POLLUTANT (circle one):	SO2	SOX	NOx	со	CO2	$\bigcirc 2$	TRS	H2S	HCL	Opacity
	Other:				11010707					
REPORTING QUARTER:	First, 2017				MONITOR MODEL:		ptima (1	Uras UV) Ga	as Analyzer	
FACILITY:					MFR:	ממג				
St. Paul Park Re	fining Co. LLC				WIF IX.	ABB				
EMISSION SUBJECT ITEM:	EQUI2					N LIMIT AND		TIME: y rolling	270r240	
ENIOGION GODGEOT TIENI.	БООТЕ							day rollin		
	700									
EMISSION UNIT(S):	FCC regenerato	<u> </u>			EMISSIO	N BASIS: Decree Ei	ffeative	1/3/06		
					consent	Decree B	LIECCIVE	4/3/00		
ASSOCIATED ITEMS:	EQUI164, TREA1	7								
PROCESS UNIT DESCRIPTIO	N: to	OUT2 is	a fluidia	ed catal	rtic era	cking unit	-			
TROOLSS ONT BESCRIPTIO								lumn for f	ractionation.	
						TOTAL OPE		HOURS	21.60	
						OF EMISSIC	ON UNIT:	-	2160	
A. EMISSION DATA SUMMAR	RY				B. CEM F	ERFORMAN	ICE SUM	MARY		
	00 5140010110 4150						05.0511			
1 DURATION OF EXCE a) Startup/Shutdown	SS EMISSIONS (HRS	5)	7 Day 0.00	365 Day 0.00	1	SOURCE O		DOWNTIME D	URING	
b) Control equipment			0.00	0.00	1	a) Monitor m		V (11K3)	0.00	
c) Process problems			0.00	0.00	1	b) Non-moni		ction _	0.00	
d) Other known cause	S		0.00	0.00	1	c) QA calibra	ation	_	0.00	1
e) Unknown causes			0.00	0.00]	d) Other kno	wn causes	3	15.00	-
f) Soot blowing			0.00	0.00]	e) Unknown	causes	_	0.00	1
g) Fuel problems			0.00	0.00]			_		
2 TOTAL DURATION (F			0.00	0.00		TOTAL DUF			15.00	
3 PERCENT OF TOTAL					3	PERCENT (
EXCESS EMISSIONS			0.00%	0.00%	-	CEM DOWN	NTIME	-	0.69%	
			······································							
	FOR OPACITY, RE	CORD AL	L TIMES IN N	MINUTES. F	OR GASE	S, RECORD	ALL TIMES	S IN HOURS.		
% Total Excess Emissions =	T	otal Durati	on of Evenes	Emissions /	(Total One	erating Time -	CEM Dov	intima)		
% Total Excess Littlesions -		Jiai Duiaii	OH OF LACESS	LINISSIONS /	(Total Ope	adung mine-	CEIVI DOW	marne)		
% Total CEM Downtime ≂	С	EM Down	time / Total O	perating Tin	ne					
NOTE: CEM downtime is	the same downtin	ne renor	rted on th	e form f	or ROUT?	for CO n	Dm			
Car Countrille 19	Dume Godffell				42012					
If no exceedances: I certify that reporting period. I certify that I										edances during the
SUBMITTED BY:	See certificat	ion pag	e at front	t of repo	rt			DATE: _		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)	
EMISSION UNIT(S):		FCC regenerator			
POLLUTANT MONITORED:		NOx and O2			
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (ppm), 7-day rolling avg	CAUSE/CORRECTIVE ACTION		
a) Startup/Shutdown	```				-
a) Startup/Shutdown					
1/1/2017 4/1/2017		No excess emissions.			
4/1/2017 _ Total	0.00	_ No excess emissions.			
lotai	0.00				
b) Control equipment					
1/1/2017					
4/1/2017 _		No excess emissions.			
Total	0.00				
c) Process problems					
1/1/2017					
4/1/2017 _		No excess emissions.			
Total	0.00				
d) Other known causes					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	_			
e) Unknown causes					
1/1/2017 4/1/2017		No excess emissions.			
4/ 1/2017 _ Total	0.00	_ NO excess ellissions.			
1000	0.00				
f) Soot blowing					
1/1/2017					
4/1/2017		_ No excess emissions.			
Total	0.00				
g) Fuel problems					
1/1/2017					
4/1/2017 _		_No excess emissions.			
Total	0.00	***			

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator		
POLLUTANT MONITORED:		NOx and O2	<u> </u>	
	TOTAL	MAX.		
	DURATION	CONCENTRATION		
DATE/TIME	(HRS)	(ppm), 365-day rolling avg	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
a) Startup/Shutdown				
1/1/2017				
4/1/2017 _		No excess emissions.		
Total	0.00			
h) 01l				
b) Control equipment				
1/1/2017 4/1/2017		No excess emissions.		
4/1/2017 Total	0.00	_ No excess emissions.		
i Otal	0.00			
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
 d) Other known causes 				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions,		
Total	0.00	_110 0/10000 0/1/10010/10;		
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
a) Fuel anablema				
g) Fuel problems 1/1/2017				
4/1/2017		No excess emissions.		
4/1/201/ Total	0.00	_ NO excess emissions.		

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		NOx and O2	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	See FCC CO CEM downtime.	
b) Non-monitor malfunction			
Total	0.00	See FCC CO CEM downtime.	
c) QA calibration			
Total	0.00	See FCC CO CEM downtime.	
d) Other known causes			
Total	15.00	See FCC CO CEM downtime.	
e) Unknown causes			
Total	0.00	See FCC CO CEM downtime.	

AQD FILE #: #0203 (AI ID 447)

		EXCES	S EMISSIO	N AND CEM	REPORTIN	NG FORM				
POLLUTANT (circle one):	SO2	sox	NOx	co	CO2	O 2	TRS	H2S	HCL	Opacity
	Other:			_						
REPORTING QUARTER:	First, 2017				MONITOR MODEL:		Optima (I	imas UV)	Gas Analyz	er
FACILITY:					MFR:	ABB				
St. Paul Park Refi	ning Co. LLC				WIFT.	ABB				
				-						
EMISSION SUBJECT ITEM:	EQUI2					N LIMIT AND				
ENISSION SOBJECT TIEN.	EQUIZ			-		vd, 02 fred d, 02 free				
						-		7		
EMISSION UNIT(S):	FCC regenerat	or		-	EMISSIO					
					Consent	Decree Ef	fective	5/30/06		
ASSOCIATED ITEMS:	EQUI164, TREA	17		_						
PROCESS UNIT DESCRIPTION:						king unit. ed to the			ationation	
		THE MACEL	Tais IION	the rcc	are route	ed to the	FCC COTUI	ini tot tra	CLIONALION	·
						TOTAL OPE	ERATING H	OURS		
						OF EMISSI	ON UNIT:		2160	
A. EMISSION DATA SUMMARY		· · · · · · · · · · · · · · · · · · ·			B CEM P	ERFORMAN	CE SUMM	RV		· · · · · · · · · · · · · · · · · · ·
A. CINICOICK BATA COMMAKT					D. OLIVI	LIG ORGANIA	<u> </u>	011		
1 DURATION OF EXCESS	EMISSIONS (HRS	3)	7 Day	365 Day	· ·	1 DURATION	OF CEM E	OWNTIME D	DURING	
a) Startup/Shutdown			0.00	0.00		SOURCE C		l (HRS)		
b) Control equipment			0.00	0.00	_	a) Monitor n			0.00	
c) Process problems			0.00	0.00	_	b) Non-mon		ction	0.00	
d) Other known causes			0.00	0.00		c) QA calibr	ration		0.00	
e) Unknown causes			0.00	0.00		d) Other kn	own causes	i	15.00	
f) Soot blowing			0.00	0.00	1	e) Unknown	causes		0.00	
g) Fuel problems			0.00	0.00	7					
2 TOTAL DURATION (HRS	6)		0.00	0.00	7 :	2 TOTAL DUI	RATION (H	RS)	15.00	
3 PERCENT OF TOTAL						3 PERCENT		ŕ		
EXCESS EMISSIONS			0.00%	0.00%	4	CEM DOW			0.69%	
					<u></u>					
	FOR OPACITY, F	RECORD ALL	TIMES IN	MINUTES.	FOR GASES	S, RECORD A	ALL TIMES	IN HOURS.		
% Total Excess Emissions =		Total Duratio	n of Excess	Emissions /	(Total Open	ating Time - C	EM Downti	me)	-	
,		, - 101 - 17 - 17		2111104101101	(TOLOR OPON	uning rime c) _ III	,,,,		
% Total CEM Downtime =		CEM Downti	me / Total C	perating Tin	ne					
NOTE:										
CEM downtime is the	e same downtim	e reported	on the	form for	EQUI2 for	CO ppm				
If no exceedances: I certify that the	e required analyses	were made,	that I am fa	miliar with th	ie results, ar	nd that to the	best of my l	nowledge th	ere were no e	xceedances
SUBMITTED BY:	See certifica	tion page	at front	of repor	rt		-	DATE:		

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	** - ***	
POLLUTANT MONITORED:		SO2 ppmvd, O2 fre	ee	
DATE/TIME	TOTAL DURATION (days)	MAX. CONCENTRATION (ppm), 7-day average	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
a) Startup/Situtuowii 1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017	0.00	_ No excess emissions.		
Total	0.00			
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017		_No excess emissions.		
Total f) Soot blowing 1/1/2017	0.00			
1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator		
POLLUTANT MONITORED:		SO2 ppmvd, O2 fre	е	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (ppm), 365-day average	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017 _		_ No excess emissions.		
Total	0.00			
b) Control equipment 1/1/2017 4/1/2017 _		_ No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017	0.00	No excess emissions.		
Total	0.00	_		
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.		
T-4-1	0.00			

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		SO2 ppmvd, O2 free	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
NOTE: CEM downtime is th	ne same downti	me reported on the form for EQUI2 fo	r CO ppm
a) Monitor malfunction			
Total	0.00	See FCC CO CEM downtime.	
b) Non-monitor malfunction			
Total	0.00	See FCC CO CEM downtime.	
c) QA calibration			
Total	0.00	See FCC CO CEM downtime.	
d) Other known causes			
Total	15.00	See FCC CO CEM downtime.	
e) Unknown causes			
Total	0.00	See FCC CO CEM downtime.	

AQD FILE#: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 SOX NOx CO Other:	O CO2 O2 TRS H2S HCL Opacity
REPORTING QUARTER: First, 2017	MONITOR MODEL: Advance Optima (Limas UV) Gas Analyzer
FACILITY: St. Paul Park Refining Co. LLC	MFR: ABB
EMISSION SUBJECT ITEM: EQUI2	EMISSION LIMIT AND AVERAGE TIME: 793.65 lbs/hr - 3 hour rolling average
EMISSION UNIT(S): FCC regenerator	EMISSION BASIS: SIP for SO2 NAAQS
ASSOCIATED ITEMS: EQUI164, TREAL?	
PROCESS UNIT DESCRIPTION: EQUI2 is a fluidized cat	
The materials from the F	CC are routed to the FCC column for fractionation.
	TOTAL OPERATING HOURS OF EMISSION UNIT: 2160
A. EMISSION DATA SUMMARY	B. CEM PERFORMANCE SUMMARY
1 DURATION OF EXCESS EMISSIONS (HRS)	1 DURATION OF CEM DOWNTIME DURING
a) Startup/Shutdown 0.00	SOURCE OPERATION (HRS)
b) Control equipment0.00	a) Monitor malfunction 0.00
c) Process problems 0.00	b) Non-monitor malfunction 0.00
d) Other known causes 0.00	c) QA calibration 0.00
e) Unknown causes 0.00 f) Soot blowing 0.00	d) Other known causes 15.00
f) Soot blowing 0.00 g) Fuel problems 0.00	e) Unknown causes
2 TOTAL DURATION (HRS) 0.00	2 TOTAL DURATION (HRS) 15.00
3 PERCENT OF TOTAL	3 PERCENT OF TOTAL
EXCESS EMISSIONS 0.00%	CEM DOWNTIME 0.69%
FOR OPACITY, RECORD ALL TIMES IN MINUTE	S. FOR GASES, RECORD ALL TIMES IN HOURS.
% Total Excess Emissions = Total Duration of Excess Emission	ns / (Total Operating Time - CEM Downtime)
% Total CEM Downtime = CEM Downtime / Total Operating	Time
NOTE:	
CEM downtime is the same downtime reported on the f	orm for EQUI2 for CO ppm
If no exceedances: I certify that the required analyses were made, that I am fair there were no exceedances during the reporting period. I certify that I am famili my knowledge the information SUBMITTED BY: See certification page at front of responsible.	iar with the information in this report and that to the best of a is valid.

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lbs/hr)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017			
Total	0.00	-	
b) Control equipment 1/1/2017 4/1/2017			
Total	0.00	_	
c) Process problems 1/1/2017 4/1/2017			
Total	0.00	-	
d) Other known causes 1/1/2017 4/1/2017			
Total	0.00	-	
e) Unknown causes 1/1/2017 4/1/2017			
Total	0.00	-	
f) Soot blowing 1/1/2017 4/1/2017 _		-	
Total	0.00		
g) Fuel problems 1/1/2017 4/1/2017			
4/1/2017 _ Total	0.00	-	

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		SO2	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
NOTE:		owntime reported on the for	m for EQUI2 for CO ppm
a) Monitor malfunction			
Total -	0.00	See FCC SO2 ppm CEM downtime.	
b) Non-monitor malfunction			
Total	0.00	See FCC SO2 ppm CEM downtime.	
c) QA calibration			
Total -	0.00	See FCC SO2 ppm CEM downtime.	
d) Other known causes			
Total	15.00	See FCC SO2 ppm CEM downtime.	
e) Unknown causes			
Total -	0.00	See FCC SO2 ppm CEM downtime.	

AQD FILE #: #0203 (AI ID 447) EXCESS EMISSION AND CEM REPORTING FORM SO2 HCL SOX NOx CO CO2 (02) TRS H2S Opacity Other: MONITOR First, 2017 MODEL: Advance Optima (Limas UV) Gas Analyzer MFR: ABB St. Paul Park Refining Co. LLC EMISSION LIMIT AND AVERAGE TIME: 9.8 lb SOx/1000 lb coke burn - 7 day rolling avg EMISSION BASIS: FCC regenerator Consent Decree, Appendix I, and NSPS 60.104(b)(2), 60.104(c) EQUI164, TREA17 EQUI2 is a fluidized catalytic cracking unit: The materials from the FCC are routed to the FCC column for fractionation. **TOTAL OPERATING HOURS** OF EMISSION UNIT: 2160 B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) 1 DURATION OF CEM DOWNTIME DURING 0.00 SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 0.00 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 0.00 0.00 d) Other known causes 15.00 0.00 e) Unknown causes 0.00 0.00 0.00 2 TOTAL DURATION (HRS) 0.00 15.00 3 PERCENT OF TOTAL 0.00% CEM DOWNTIME 0.69%

FO	R OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.	
% Total Excess Emissions =	Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)	
% Total CEM Downtime =	CEM Downtime / Total Operating Time	

If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.

SUBMITTED BY:

NOTE:

POLLUTANT (circle one):

REPORTING QUARTER:

EMISSION UNIT(S):

ASSOCIATED ITEMS:

EMISSION SUBJECT ITEM: EQUI2

PROCESS UNIT DESCRIPTION:

A. EMISSION DATA SUMMARY

a) Startup/Shutdown

b) Control equipment

c) Process problems

e) Unknown causes

f) Soot blowing

g) Fuel problems

d) Other known causes

2 TOTAL DURATION (HRS)

3 PERCENT OF TOTAL

EXCESS EMISSIONS

FACILITY:

See certification page at front of report

CEM downtime is the same downtime reported on the form for EQUI2 for CO ppm

DATE:

REPORTING QUARTER:		First, 2017 AQDFILE#: #0203 (AI ID 447)	
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORE) :	Lb SOX	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION(lb Sox/ton), hourly average	
a) Startup/Shutdown			
1/1/201 4/1/201		No excess emissions.	
Total	0.00	,	
b) Control equipment			
1/1/201		Ma ayana amin tan	
4/1/201 Total	0.00	No excess emissions.	
-> Donor or marking			
c) Process problems 1/1/201	7		
4/1/201		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/201			
4/1/201		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/201		No company and advantage of the company of the comp	
4/1/201 Total	0.00	No excess emissions.	
	•		
f) Soot blowing	-		
1/1/201 4/1/201		No excess emissions.	
Total	0.00	NO EXCESS EMISSIONS.	
a) Fuel avallone			
g) Fuel problems 1/1/201	7		
4/1/201		No excess emissions.	
Total	0.00	•	

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		FCC regenerator	
POLLUTANT MONITORED:		Lb SOX	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
NOTE:			
	the same	downtime reported on the f	orm for EQUI2 for CO ppm
a) Monitor malfunction			
Total	0.00	See FCC NOx or CO CEM downtim	ne.
b) Non-monitor malfunction			
Total	0.00	See FCC Nox or CO CEM downtim	е.
c) QA calibration			
Total _	0.00	See FCC NOx or CO CEM downtin	ne.
d) Other known causes			
Total	15.00	See FCC Nox or CO CEM downtim	е.
e) Unknown causes			
Total —	0.00	See FCC NOx or CO CEM downtin	ne.

AQD FILE#: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2	NOx Flow	со	CO2	O2	TRS	H2S	HCL	Opacity	
REPORTING QUARTER:	First, 201	7			MODEL		c Plow P	ite/FG H2S	. CEM	
REPORTING QUARTER.	FILSE, ZUI	· · · · · · · · · · · · · · · · · · ·		-	WODEL.	ruei Ga	S FIOW RO	ce/FG HZ	CEN	
FACILITY:					MFR:					
St. Paul Park Refin	ning Co. LLC	2		_						
				-	51 110010				_	
EMISSION SUBJECT ITEM:	EQUI3							AGING TIME or rolling		
EINIGSTON GODDEOT TEN.	EQUID	·····		=					ng average	·
·										
EMISSION UNIT(S):	No. 2 Crud	le Vacuum He	eater	_	EMISSIC	ON BASIS:		SIP for S	02 NAAQS	
	5-B-1			_						
APPOCIATED ITEMS	COMCZ COM	IGOO FOUT1	. DOUT 1 7 1	TOTITO OC	GMD1770	COMCO				
ASSOCIATED ITEMS:	COMG / , COM	G20, EQUII	3, EQUII7	5, EQUI206,	STRU70,	COMG20				
					TOTAL C	OPERATIN	G HOURS	Total	Fuel Gas	Fuel Oil
					OF EMIS	SION UNI	T:	2160	2160	. 0
A. EMISSION DATA SUMMARY					B. CEM	PERFORM	IANCE SUN	MARY		
1 DURATION OF EXCESS	EMISSIONS (HDC/	lb/hr	lb/mmbtu	1	DURATIO	N OF CEM	DOWNTIME	DUBING	
a) Startup/Shutdown	LIVIIOCIOIVO (I	1110)	0.00	0.00	'		OPERATIO		Fuel Gas	Fuel Oil
b) Control equipment		_	0.00	0.00	a) Monitor malfunction 0.00					0.00
c) Process problems		_	0.00	0.00						0.00
d) Other known causes			0.00	0.00	c) QA calibration 0.00 0					0.00
e) Unknown causes		_	0.00	0.00	1	d) Other k	nown cause	es	9.00	0.00
f) Soot blowing		_	0.00	0.00	4	e) Unknov	wn causes		0.00	0.00
g) Fuel problems		_	0.00	0.00						
2 TOTAL DURATION (HRS)	_	0.00	0.00	2 TOTAL DURATION (HRS) 9.00					0.00
3 PERCENT OF TOTAL			0.008		3 PERCENT OF TOTAL CEM DOWNTIME 0.42%					
EXCESS EMISSIONS		-	0.00%	0.00%	-	CEM DO	/VIN I IIVIE		0.42%	0.00%
	COD ODAOIT		II TIMEO IN		L	BEGORD				
	FOR OPACIT	Y, RECORD A	LL HMES IN	MINUTES. FO	R GASES	, RECORL	ALL HME	S IN HOURS	·	
% Total Excess Emissions =		Total Duration	of Evenes Er	nissions / (Tota	Operating	Timo CE	EM Downtim	·~\		
				•	Operating	y mine - CE	ENT DOWNLIN	(-)		
% Total CEM Downtime =		CEM Downtin	ne / Total Ope	erating Time						
NOTES: There was zero fuel	oil runtin	me during th	ne quarter	·			···			
If no exceedances: I certify that the										ceedances
during the reporting period. I certif										
SUBMITTED BY:	See certif	ication pag	ge at front	t of report			_	DATE:		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		5-B-1	
POLLUTANT MONITORED:		SO2 lb/hr - 3 hour rolling average	
DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017			
4/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_	
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	110 0,0000 01110010110.	

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		5-B-1	
POLLUTANT MONITORED:		SO2 lb/mmbtu - 3 hour rolling average	_
	TOTAL		
DATE/TIME	DURATION (HRS)	MAX. EMISSIONS RATE CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown			
1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
b) Control equipment			
1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
d) Other known causes			
1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_NO OXOCOS CITISSIONS.	
e) Unknown causes			
1/1/2017			
4/1/2017 _ Total	0.00	_No excess emissions.	
f) Soot blowing			
1/1/2017			
4/1/2017_	<u> </u>	_No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	, to exceed embolorio.	

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203	(AI ID 447)
EMISSION UNIT(S):		5-B-1, fuel gas f	low meter		
POLLUTANT MONITORED:		S02			
DATE/T:ME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE	ACTION		
a) Monitor malfunction					
Total	0.00	-			
b) Non-monitor malfunction					
Total	0.00	-			
c) QA calibration					
Total	0.00	_			
d) Other known causes 1/28/2017 0:00					
1/28/2017 9:00 Total	9.00 9.00	_Communications issue.	Missing data.		
e) Unknown causes					
Total	0.00	-			

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 5-B-1	
POLLUTANT MONITORED:		Fuel Oil Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOx	СО	CO2 O2 TRS	H2S HCL	Opacity
REPORTING QUARTER:	First, 201	7		MONITOR MODEL: MFR: ABB	Advance Optima Li	imas 11
St. Paul Park Ref	ining Co. LL	С				
				EMISSION LIN	IIT AND AVERAGE TIME	<u>:</u> :
			··	0.05 lbs/mm	btu - 12 month roll	ing average
EMISSION SUBJECT ITEM:	EQUI4			0.14 lbs/mm	btu - 3 hour rollin	g average
EMISSION UNIT(S):	Heater 2-B	-3		EMISSION BA BACT PSD, 4	SIS: OCFR 52.21, Minn. R	2. 7007.3000
ASSOCIATED ITEMS:	COMG7, EQU	I163, EQUI	176, EQUI	296, STRU15		
				TOTAL OPERA OF EMISSION	ATING HOURS	-
A. EMISSION DATA SUMMAR	₹Y			B. CEM PERF	ORMANCE SUMMARY	
1 DURATION OF EXCES		(HRS)				
		12 mo	3 hr	1 DURAT	TION OF CEM DOWNTIN	IE DURING
a) Startup/Shutdown		0.00	0.00	SOUR	CE OPERATION (HRS)	
b) Control equipment		0.00	0.00	a) Mon	itor malfunction	0.00
c) Process problems		0.00	0.00	b) Non-	-monitor malfunction	0.00
d) Other known causes		0.00	0.00	c) QA d	calibration	1.00
e) Unknown causes		0.00	0.00	d) Othe	er known causes	11.00
f) Soot blowing		0.00	0.00	e) Unkr	nown causes	0.00
g) Fuel problems		0.00	0.00	.		
2 TOTAL DURATION (H	RS)	0.00	0.00	. 2 TOTAL	. DURATION (HRS)	12.00
3 PERCENT OF TOTAL				3 PERCE	ENT OF TOTAL	
EXCESS EMISSIONS		0.00%	0.00%	. CEM D	OWNTIME	0.56%
	FOR OPACIT	Y, RECORD	ALL TIMES	IN MINUTES. FOR G	GASES, RECORD ALL TI	MES IN HOURS.
% Total Excess Emissions =		Total Duratio	on of Excess	Emissions / (Total Op	perating Time - CEM Down	ntime)
% Total CEM Downtime =		CEM Downti	me / Total C	Operating Time		
NOTES:	<u></u>					
	·					
				· · · · · · · · · · · · · · · · · · ·		
If no exceedances: I certify that no exceedances during the rep information is valid.						
SUBMITTED BY:	See certifi	cation page	e at fron	t of report	DATE:	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 2-B-3	
POLLUTANT MONITORED:		NOx lb/mmbtu (12	month rolling avg) and O2
DATE/TIME	DURATION	CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
c) Process problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_140 0,0003 01113310113.	
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
iotai	0.00		
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_	
g) Fuel problems 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 2-B-3	
POLLUTANT MONITORED:		NOx 1b/mmbtu (3 h	r rolling avg) and O2
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lbs/mmbtu)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	No excess emissions.	
b) Control equipment 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
c) Process problems 1/1/2017 4/1/2017 Total		_No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 2-B-3	
POLLUTANT MONITORED:		NOx and O2	
DATE/TIME	TOTAL	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	_	
b) Non-monitor malfunction			
Total —	0.00	<u></u>	
c) QA calibration 1/9/2017 11:00			
1/9/2017 12:00	1.00 1.00	_ Quarterly calibration gas audit.	
d) Other known causes 1/28/2017 0:00			
1/28/2017 9:00 3/21/2017 13:00	9.00	Communications issue. Missing data.	
3/21/2017 15:00	2.00	Preventive maintenance followed by ca	alibration and validation.
	11.00	_	
e) Unknown causes			
Total	0.00	_	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2	NOx	со	CO2	O2	TRS	H2S	HCL	Opacity	
	Other:	Flow		-						
					MONITO					
REPORTING QUARTER:	First, 20	17		-	MODEL:	Fuel Gas	Flow Rat	e/FG H2S C	EM	
FACILITY:					MFR:					
St. Paul Park R	efining Co.	LLC		_						
				-						
					EMISSIC	ON LIMITS A				
EMISSION SUBJECT ITEM:	EQUI4			-				3 hour rol		
						0.2834 1	D SOZ/MMD	tu - 3 hou	rolling a	average
EMISSION UNIT(S):	No. 2 Cruc	le Charge H	eater	-	EMISSIC	ON BASIS:		SIP for S	02 NAAQS	
ASSOCIATED ITEMS:	COMG7, EQU	JI163, EQUI	176, EQUI29	96, SI	RU15					
					ODEDA	TINO HOUR	C OF EMICO	NON LINUT.		
					OPERA	TING HOUR	S OF ENIS	Total	Fuel Gae	Natural Gas
								2160	2160	2160
										====
A. EMISSION DATA SUMMA	RY				B. CEM	PERFORMA	NCE SUM	MARY		
1 DURATION OF EXC	ESS EMISSIO	NS (HRS)			1	DURATION	OF CEM E	OWNTIME D	URING	
		lb/hr	lb/mmbtu			SOURCE	OPERATION	N (HRS)		
a) Startup/Shutdown		0.00	0.00	-					Fuel Gas	Natural Gas
b) Control equipmen		0.00	0.00	-	•	a) Monitor		-11	0.00	0.00
c) Process problems		0.00	0.00	-		•	nitor malfund	ction	0.00	0.00
d) Other known caus	ses	0.00	0.00	-		c) QA calib			0.00	0.00
e) Unknown causes		0.00	0.00	-		•	own causes	•	9.00	9.00
f) Soot blowing g) Fuel problems		0.00	0.00	-		e) Unknow	n causes		0.00	0.00
2 TOTAL DURATION	/HDC/	0.00	0.00	-	,	TOTAL DU	IDATION /L	DC)	9.00	9.00
3 PERCENT OF TOTAL		0.00	0.00	-	l .	PERCENT	•	13)	9.00	9.00
EXCESS EMISSION		0.00%	0.00%	_		CEM DOW			0.42%	0.42%
	FOR OPACIT	ΓY, RECORD A	ALL TIMES IN	MINUT	ES. FOF	R GASES, R	ECORD ALI	L TIMES IN HO	DURS.	
% Total Excess Emissions =		Total Duratio	n of Excess E	mission	ıs / (Total	Operating T	ime - CEM I	Downtime)		
% Total CEM Downtime =		CEM Downti	me / Total Ope	erating	Time					
NOTES:										
If no exceedances: I certify the exceedances during the reporvalid.	ting period. I o		familiar with th	ie infori	mation in			e best of my kr		
SUBMITTED BY:	DOC COLUIT	cacion pa	ac ac trong	. 01 1	.cpcrc			DATE:		

REPORTING QUARTER:		First, 2017	AQD FI	LE#: #0203 (AI ID 447)
EMISSION UNIT(S):		2-B-3		
POLLUTANT MONITORED:		SO2 lb/hr - 3 hour	rolling average	
DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.		
Total b) Control equipment 1/1/2017 4/1/2017	0.00	No excess emissions.		
4/1/2017 Total	0.00	NO excess emissions.		
c) Process problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		2-B-3	
POLLUTANT MONITORED:		SO2 lb/mmbtu - 3 hour rolling average	
DATE/TIME	TOTAL DURATION (HRS)	MAX. EMISSIONS RATE CAUSE/CORRECTIVE AC	TION
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
b) Control equipment 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	

REPORTING QUARTER:		First, 2017	·	AQD FILE #: #0203 (AI ID 447)	
EMISSION UNIT(S):		2-B-3, Fuel Gas F	low Rate		
POLLUTANT MONITORED:		S02			
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE	ACTION		
a) Monitor malfunction	(/IIIO)	ONUSE/OURICE TIVE	ACTION		
Total	0.00	_			
b) Non-monitor malfunction					
Total	0.00	_			
c) QA calibration					
		-			
d) Other known causes 1/28/2017 0:00					
1/28/2017 9:00 Total	9.00 9.00	_Communications issue.	Missing data.		
e) Unknown causes					
Total -	0.00	-			

REPORTING QUARTER:		First, 2017		AQD FILE #:	#0203 (AI ID 447)	
EMISSION UNIT(S):		2-B-3, Natural Gas	s Flow Rate			
POLLUTANT MONITORED:		S02				
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE	ACTION			
a) Monitor malfunction						
Total	0.00	_				
b) Non-monitor malfunction						
Total	0.00	_				
c) QA calibration						
Total	0.00	_				
d) Other known causes 1/28/2017 0:00						
1/28/2017 9:00 Total	9.00	_Communications issue.	Missing data.			
e) Unknown causes						
Total	0.00	-				

AQD FILE#: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2	NOx	со	CO2	02	TRS	H2S	HCL	Opacity
	Other:	Flow							
					MONITO	R			
REPORTING QUARTER:	First, 2017	······································			MODEL:		Fuel Gas	Flow Rat	e/FG H2S CEM
FACILITY:					MFR:				
St. Paul Park Re	fining Co. LLC				_				
•					EMISSIO	N LIMIT	S AND AVER	RAGING TIM	ΛE:
EMISSION SUBJECT ITEM:	EQUI5				_1	1.2 lb	S02/hr -	3 hr roll	ling average
						0.030]	lb SO2/mmb	tu - 3 hc	our rolling average
	Mr. 1 County Warren	1					_		
EMISSION UNIT(S):	No. 1 Crude Vacu	um neater			EMISSIO	N BASIS	S: <u>.</u>	SIP for S	O2 NAAQS
	1-B-5								
ASSOCIATED ITEMS:	COMG7, EQUI163,	EOUT178 ST	PRII10						
AGGGG/ATED ATEMO.	CONC. / Egotics /	DQCII/O/ D			-				
					TOTAL O	PERATI	ING HOURS		
					OF EMIS	SION UI	NIT:	2160	
A. EMISSION DATA SUMMAR	Υ				B. CEM F	PERFOR	MANCE SU	MMARY	·-·
1 DURATION OF EXCE	SS EMISSIONS (HRS)				1 [DURATIO	ON OF CEM	DOWNTIME	DURING
1		lb/hr	lb/mmbtu		}	SOURCE	E OPERATIO	N (HRS)	
a) Startup/Shutdown		0.00	0.00						
b) Control equipment		0.00	0.00		8	a) Monito	or malfunction	ı	0.00
c) Process problems		0.00	0.00		1	•	nonitor malfur	nction	0.00
d) Other known causes		0.00	0.00		1	c) QA ca			0.00
e) Unknown causes		0.00	0.00		i	-	known cause	s	9.00
f) Soot blowing		0.00	0.00		•	e) Unkno	wn causes		0.00
g) Fuel problems		0.00	0.00						
2 TOTAL DURATION (H	RS)	0.00	0.00				OURATION (F	•	9.00
3 PERCENT OF TOTAL					i		NT OF TOTAL	•	
EXCESS EMISSIONS	•	0.00%	0.00%		(CEM DO	WNTIME		0.42%
	FOR OPACITY, RECO	ORD ALL TIME	S IN MINUTI	ES. F	OR GASE	S, RECO	ORD ALL TIM	IES IN HOU	IRS.
% Total Excess Emissions =		Total Duration	of Excess Em	nission	s / (Total 0	Operating	g Time - CEN	l Downtime)	
% Total CEM Downtime =		CEM Downtime	e / Total Oper	rating '	Time				
NOTES:			•						
NOTES.									
		· · · · · · · · · · · · · · · · · · ·						 -	
									
If no exceedances: I certify that during the reporting period. I ce									edge there were no exceedances
,	suny mantannan w See certificatio					ie Dest C	•	•	madon is Vallu.
SUBMITTED BY:	See cercificatio	paye at 1	LIONE OF T	ebord	-			DATE:	

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		1-B-5	
POLLUTANT MONITORED:		502 - lb/hr	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lb/hr, 3-hour avg)	CAUSE/CORRECTIVE ACTION
D/ (12) HMC	(, ,, , , , ,	(ID/III, O HOU! LVg)	O TOOL TO THE TO THOU
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_,10 0,0000 0,1110010110.	
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	140 excess entissions.	
c) Process problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	NO excess emissions.	
d) Other known causes 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
e) Unknown causes 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	•	

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)	
EMISSION UNIT(S):		1-B-5		
POLLUTANT MONITORED:		S02 - lb/mmbtu		
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION (lb/mmBtu)	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017				
4/1/2017		No excess emissions.		
Total	0,00	_ NO excess ermssions.		
10.01	5.00			
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_ NO CADOGO CIANOGIONIS.		
d) Other known causes				
1/1/2017		N		
4/1/2017 Total	0.00	No excess emissions.		
TOTAL	0.00			
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	•		
g) Fuel problems				
g) Fuer problems 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AT ID 447)
EMISSION UNIT(S):		1-B-5, Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction		•	
Total	0.00	-	
c) QA calibration			
Total .	0.00	-	
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue. Missing data.	
Total	9.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOx Flow	со	CO2	O2	TRS	H2S	HCL	Opacity	
	Galery	TIOW		_	MONITO	OR				
REPORTING QUARTER:	First, 20	17		_	MODEL	.:	Fuel Gas	Flow Rate	/FG H2S CEM	
FACILITY:					MFR:					
St. Paul Park Re	efining Co.	LLC		_						
EMISSION SUBJECT ITEM					EMISSI		AND AVER			
EMISSION SUBJECT ITEM:	EQUI6			_					rolling average rolling average	
						0.90 11	J 302/ IIII DC	.u - 3 110u1	TOTITING AVEL	<u></u>
EMISSION UNIT(S):	Crude Cha:	rge Heater		_	EMISS!	ON BASI	S: _ <u>s</u>	SIP for SO	2 NAAQS	
	Heater 1-1	B-7		_						
ASSOCIATED ITEMS:	COMG7, COI	MG14, EQUI16	3, EQUI18:	2, EQUI18:	3, STRU	69				
					OPERA	TING HO	URS OF EM	ISSION UNIT	.	
					01 210		ONO OF LIM	Total	Fuel Gas	Fuel Oil
								2160	2160	0
A. EMISSION DATA SUMMA				 			ance Summ			
DURATION OF EXC	ESS EMISSIOI	NS (HRS)	11. ft	16 6 6 4-	1			DOWNTIME	DURING	
a) Startup/Shutdown			lb/hr 0.00	lb/mmbtu 0.00	'	SOURCE	OPERATIO	N (HRS)	Fuel Gas	Fuel Oil
b) Control equipment		-	0.00	0.00	1	a) Monito	or malfunction	1	0.00	0.00
c) Process problems		-	0.00	0.00	1	b) Non-monitor malfunction			0.00	0.00
d) Other known cause	es	_	0.00	0.00]	c) QA calibration		0.00	0.00	
e) Unknown causes		_	0.00	0.00]	d) Other	known cause	es	10.00	0.00
f) Soot blowing		_	0.00	0.00	4	e) Unkno	wn causes		0.00	0.00
g) Fuel problems		-	0.00	0.00	4 .					
2 TOTAL DURATION (I 3 PERCENT OF TOTAL	•	-	0.00	0.00			DURATION (I NT OF TOTAL	•	10.00	0.00
EXCESS EMISSION		-	0.00%	0.00%]		WNTIME	L	0.46%	0.00%
	FOR OPACI	TY, RECORD A	II TIMES IN	MINUTES	FOR GAS	SES REC	CORD ALL T	IMES IN HOLL	IRS	
	1011017101	,			1011071					
% Total Excess Emissions =		Total Duration	of Excess En	nissions / (To	otal Opera	atina Time	- CEM Dow	ntime)		
				•				,,,,,,		
NOTES: There was zero f	uel oil ru	ntime during	the quar	ter.						
										
If no exceedances: I certify the during the reporting period. I d										o exceedances
SUBMITTED BY:	•	fication pag		•		.5 (1,6)6(•	DATE:	mayor is valid.	

REPORTING QUARTER:		First, 2017	·	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		EQUI6		
POLLUTANT MONITORED:		SO2 lb/hr		
	TOTAL DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTIO	N.
a) Startup/Shutdown				
1/1/2017 4/1/2017		No excess emissions.		
4/1/2017 _ Total	0.00	_ NO excess emissions.		
Total	0.00			
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
d) Other known equates				
d) Other known causes 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
f) Soot blowing				
1/1/2017				
4/1/2017 _		No excess emissions.		
Total	0.00			
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	=		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		EQUI6	
POLLUTANT MONITORED:		SO2 lb/mmbtu	
	TOTAL		
	TOTAL DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017 _		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2017			
4/1/2017 _		No excess emissions.	
Total	0.00	-	
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_	
e) Unknown causes			
1/1/2017			
4/1/2017 _		No excess emissions.	
Total	0.00	_	
f) Soot blowing			
1/1/2017			
4/1/2017 _		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203	(AI ID 447)	
EMISSION UNIT(S):		Heater 1-B-7				
POLLUTANT MONITORED:		Fuel Gas Flow Rate	e			
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE	ACTION			
a) Monitor malfunction						
Total	0.00	-				
b) Non-monitor malfunction						
Total	0.00	-				
c) QA calibration						
Total -	0.00	-				
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue.	Missing data.			
3/9/2017 9:00 3/9/2017 10:00 Total	1.00 10.00	Communications issue.	Missing data.			
e) Unknown causes						
Total -	0.00	-				

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 1-B-7	
POLLUTANT MONITORED:		Fuel Oil Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE#: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2	NOx Flow	СО	CO2 O2	TRS	H2S	HCL	Opacity
				MON	TOR			
REPORTING QUARTER:	First, 2017			MOD		Fuel Gas	Flow Rat	e/FG H2S CEM
EAOU ITV				MFR:				
FACILITY:	::::::::::::::::::::::::::::::::::::::			WIFK.				
St. Paul Park Rei	ining Co. LLC							
				EMIS	SION LIMI	TS AND AVER	RAGING TIM	IE:
EMISSION SUBJECT ITEM:	EQUI7			LIVIIO		-		colling average
ENNOCION CODOLOT TEM.	DQUIT							our rolling average
					0.050	12 5027	, cu 5 11c	our rolling average
EMISSION UNIT(S):	Distillate Unif	iner		EMIS	SION BAS	IS:	SIP for S	O2 NAAQS
	29-B-1, 29-B-2					-		
ASSOCIATED ITEMS:	COMG7, EQUI163,	EQUI184,	STRU68					
				TOTA	L OPERAT	TING HOURS		
				OF E	MISSION L	JNIT:	2160	
A. EMISSION DATA SUMMAR	Υ			B. CE	M PERFO	RMANCE SU	MMARY	
1 DURATION OF EXCES	SS EMISSIONS (HRS)							
		lb/hr	lb/mmbtu		1 DURAT	ION OF CEM	DOWNTIME	DURING
a) Startup/Shutdown		0.00	0.00		SOURC	E OPERATIO	N (HRS)	
b) Control equipment		0.00	0.00		a) Monit	or malfunction	1	0.00
c) Process problems		0.00	0.00		b) Non-	monitor malfur	nction	0.00
d) Other known causes	i,	0.00	0.00		c) QA c	alibration		0.00
e) Unknown causes		0.00	0.00		d) Othe	r known cause	es	0.00
f) Soot blowing		0.00	0.00		e) Unkn	own causes		0.00
g) Fuel problems		0.00	0.00					
2 TOTAL DURATION (HI	RS)	0.00	0.00		2 TOTAL	DURATION (H	HRS)	0.00
3 PERCENT OF TOTAL					3 PERCE	NT OF TOTAL	L	
EXCESS EMISSIONS		0.00%	0.00%		CEM D	BMITING		0.00%
	FOR OPACITY, REC	ORD ALL TIN	MES IN MINUTE	S. FOR GA	SES, REC	ORD ALL TIM	MES IN HOU	RS.
% Total Excess Emissions =		Total Duratio	n of Excess Em	issions / (To	tal Operatir	ng Time - CEM	/I Downtime)	
% Total CEM Downtime =		CEM Downti	me / Total Opera	ating Time				
NOTES:				_				
NOTES:					· • • • • • • • • • • • • • • • • • • •			
						··		
			·					
If no exceedances: I certify that								
during the reporting period. I ce SUBMITTED BY:	rtify that I am familiar w See certificati		•		o tne best o	•	ge the inform DATE:	nation is valid.
CODIMITIED DT.		J3- 40				_	J. (1L.	

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		29-B-1, 29-B-2	
POLLUTANT MONITORED:		S02 - lb/hr	<u></u>
	TOTAL DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	•	
1) Control occiono ent			
b) Control equipment 1/1/2017	•		
4/1/2017		No excess emissions.	
Total	0.00	INO excess emissions.	
iotai	0.00		
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions,	
Total	0.00	=	
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
e) Unknown causes 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	NO excess emissions.	
1 2 6	0.00		
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	
g) Fuel problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	•	

REPORTING QUARTER:		First, 2017	AQD FILE #:	#0203 (AI ID 447)
EMISSION UNIT(S):		29-B-1, 29~B-2	· · · · · · · · · · · · · · · · · · ·	
POLLUTANT MONITORED:		S02 - 1b/mmbtu		
	TOTAL DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	•		
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		29-B-1, 29-B-2 Fuel Gas Flow Ra	ate
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

dances during the reporting period. I ce								
exceedances: I certify that the required a								
:8:								
al CEM Downtime ≈	CEM Downt	ime / Total Op	əmiT g					
al Excess Emissions =	Total Duratio	a seess E) istoT) \ and	Operatin	O - əmiT g	mitnwoO M∃	(€	
FOR OPACI	ЛТ, RECORD AL	L TIMES IN M	ES. FOR G.	YSES' E	SECORD A	TE TIMES II	HOURS.	
EXCESS EWISSIONS	%00°0	% 00°0	0	EW DO	NATIME		800.0	
3 PERCENT OF TOTAL					TOF TOT	יר		
(29H) NOITARUD JATOT S	00.0	00.0	T S	D JATO	иоітаяц	(SAH)	00.0	
a) Fuel problems	00.0	00.0	Ĭ					
gniwold foo? (f	00.0	00.0			AU CSUSES		00.0	
e) nuknown causes	00.0	00.0			neo unou	sə	00.0	
d) Other known causes	00.0	00.0		m-novi (. (So AΩ (.	onitor malf bration	Honore	00.0	
b) Control equipment c) Process problems	00.0	00.0	1		. malfuncti		00.0	
awobłud?(quhat2) (s	00.0	00.0	``	ofice M	itoarigioa.	•	00 0	
	lb/hr	ոյգաա/գլ	s	SOURCE	ТАЯЗЧО	ON (HRS)		
1 DURATION OF EXCESS EMISSION			1			MITNWOG N	ב מחצומפ	
YAAMMUS ATAU NOISSII			B. CEM P	ЕК ЕОК	WANCE S	YAAMMU	·	
	/sarra@g // 200	(corrected)	_		AUOH ƏV IT:	09TZ		
OCIATED ITEMS: COMG9, CO	OWG1, EQUITE3,	28111109	61.					
3-B-1, 3-	-B-S' 3-B-3							
SION UNIT(S): Naphtha U	Unifiner Heate	Je	EWISSION	SISA8 N	19	S TOT GIS	ZQAAN SC	
			_	T OCO	III / ZOE O	Tr. C = nam	ont rolling	абрталр
SION SUBJECTITEM: EQUIS							ling averag	
7712. 1011 4110 11010						IT ƏNIƏAЯ		
St. Paul Park Refining Co.	· rrc							
:XIIT			MFR:			<u>.</u>		
DRTING QUARTER: First, 20	LT0		MODEL:	,	Fuel Ga	s Flow Rat	e/FG H2S CEI	Þ
Ofper	ETOM		ROTINOM	-				
SOS :(encle one): TNATU.	XON	co	ZO 7	гят	HZS	нсг	Opacity	
	E √∩ E ⊘	EMISSION A	בואו עבּגסע	J-I DNIII	<u>IVI ZIVI</u>			

EXCESS EMISSION KEPORT CONTINUOUS EMISSION MONITOR

		00.0	Total
	No excess emissions.		
			L102/1/1
			g) Fuel problems
	_	00.0	TetoT
	No excess emissions.		7102/1/ p
			gniwold too2 (f \\T10S\IV\I
		00.0	Total
	.No excess emissions.		
			1/1/2017
			e) Nukuown canses
	_	00.0	Total
	No excess emissions.		4/1/2017
			7/1/2017
			d) Other known causes
	_	00.0	Total
	No excess emissions.		7102/1/4
			7/1/2017
			c) Process problems
		00.0	
	No excess emissions.		7102/1/1 7102/1/ 1
			tnemqiupe lortnoO (d
			_
		00.0	lstoT
	No excess emissions.		
			s Startup/Shutdown 1/1/2017
			amoping3/ampoj3 (a
NO	MAX. CONCENTRATION CAUSE/CORRECTIVE ACT	(SAH)	DATE/TIME
		JATOT NOITAЯUQ	
		IATOT	
	205 - TP/PE		OLLUTANT MONITORED:
	3-B-1, 3-B-2, 3-B-3		:(S)TINU NOISSIME
FILE#: #0203 (AI ID 447)	First, 2017 Add		зероктіме филктек:

EXCERS EMISSION REPORT CONTINUOUS EMISSION MONITOR

	_	00.0	Total
	No excess emissions.		
			a) Fuel problems
	_	00.0	Total
	No excess emissions.		
			gniwold foo? (f
		00.0	latoT
	No excess emissions.		
			4/4/5042 e) Nukuowu csnses
	_	00.0	lotal
	_No excess emissions.		
			d) Other known causes
	_	00.0	
	No excess emissions.		7102/1/ <i>\</i>
			c) Process problems
	_	00.0	
	.No excess emissions.		7102/1/r 7102/1/4
			b) Control equipment
		00.0	Total
	No excess emissions.		7102/1/1
			a) Startup/Shutdown
E/CORRECTIVE ACTION	MAX. CONCENTRATION CAUS	(\$ਬਜ)	DATE/TIME
		JATOT NOITARUQ	
	maquu/qT - 20S		OLLUTANT MONITORED:
	3-B-1' 3-B-5' 3-B-3		:(S)TINU NOISSIM:
AQD FILE # #0203 (AI ID 447)	First, 2017		:ВЕРОЯТІИС QUARTER:

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

			00.0	istoT
				e) Nuknown causes
			00.0	lstoT
				d) Other known causes
			00.0	. lstoT
				calibration
			00.0	. listoT
				b) Non-monitor malfunction
			00.0	lstoT
				a) Monitor malfunction
		CAUSE/CORRECTIVE ACTION	JATOT NOITARUD (SAH)	<u> </u>
		202		POLLUTANT MONITORED:
		3-B-1,2,3 Fuel Gas Flow Rate		EMISSION UNIT(S):
(V# dI IA	VOD FILE # #0203 (First, 2017		яероктіме Quarter:

UBMITTED BY: See certifica		-			:3TAQ		
no exceedances: I certify that the required ana uring the reporting period. I certify that I am fan							
3315							
Total CEM Downtime ≈	CEW DOWN	IO IstoT \ əmitr	oerating	əmiT			
Total Excess Emissions =	Total Durat	tion of Excess I	noissimΞ	s / (Total Operati	omitime - CEM Downtime	(9)	
FOR OPACITY, R	SECORD ALL	L TIMES IN MI	SETUN	FOR GASES, R	ECORD ALL TIMES IN H	ноика	
EXCESS EWISSIONS	\$00.0	\$00.0	_		WATIME	%00 .0	
2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL	00.0	00.0	_			00.0	
g) Fuel problems	00.0	00.0	-	1 10101 2	(29H) NOITVALK	00 0	
f) Soot blowing	00.0	00.0	-	е) Дики	wu csnses	00.0	
e) Nukuomu csnaes	00.0	00.0	-	d) Other	kuowu canses	00.0	_
d) Other known causes	00.0	00.0	_	s) AD (၁	noiterdii	00.0	-
c) Process problems	00.0	00.0	_	n-noV (d	noitor malfunction	00.0	_
b) Control equipment	00.0	00.0		tinoM (s	r malfunction	00.0	_
a) Startup/Shutdown	00.0	00.0					
	JA/dl	ոյզաա/զլ			(SAH) NOITARES		
1 DURATION OF EXCESS EMISSIONS	(HRS)				ON OF CEM DOWNTIME	E DURING	
YAAMMUS ATAO NOISSIMA				B. CEM PERFO	YAAMMUS SUMMARY		
				TARAGO LATOT J NOISSIMA 70		-	
SSOCIATED ITEMS: COMB9, COMB7,	EQUIT63,	EQUI186, 2	TAUAT				
_ 							
MISSION UNIT(S): 3-B-4	rarge Heat	- zə	-	EMISSION BYS	S: SIP for S	SQAAN SO	
					·		
CTOOR WHITH LOTOGOO NOICOIN			_		to SOS/mmbtu - 3 ho		
MISSION SUBJECT ITEM: EQUIP					S AND AVERAGING TIN		₽ D
			_				
ACILITY: St. Paul Park Refining Co. LL	57			:83M			
EPORTING QUARTER: First, 2017			-	WODET:	Fuel Gas Flow Rat	Fe/FG HZS CEM	
()Guette Other	E TOM			AOTINOM			
	×ON	00	cos	SAT SO	HS2 HCF	Opacity	
OLLUTANT (circle one): SO2							
OLLUTANT (circle one): SO2	⊽ ∃	VE22 EMISS	אלאני	וו אטאבא אופט ע	אם רטעואו		
OLLUTANT (circle one): SOS	ĒΧ	CERR EMIRE	<u> </u>	<u>тяочая маэ</u> (4G FORM		

EXCESS EMISSION KEPORT CONTINUOUS EMISSION MONITOR

No excess emissions.	00.0	g) Fuel problems 71/201/1/ 71/2017 Tistal
.snoissime seexs oN	00.0	f) Soot blowing 1/1/2017 4/1/2017 Total
. No excess emissions.	00.0	e) Unknown causes 1/1/2017 7/2017
.snoissime seexs oW_		d) Other known causes 1/1/2017 Total
. No excess emissions.		c) Process problems \\\\2017 \\\\2017
. No excess emissions.		b) Control equipment 1/1/2017 4/1/2017 Total
. No excess emissions.		nwobłuń?\quhet? (s \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
) MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	ЈАТОТ 8ЯН) ИОІТАЯИО	DATE/TIME
дт - zos		POLLUTANT MONITORED:
3-B-4		EMISSION UNIT(S):
ETER, 2017 AdD FLE#: #0203 (AI ID 447)		:ЯЕТЯАОФ ФИГЕР

EXCESS EMISSION KEPORT CONTINUOUS EMISSION MONITOR

No excess emissions.	00.0	g) Fuel problems 1/1/2017 4/1/2017 Total
No excess emissions.	00.0	gniwold bood († Tr02/r/r Tr02/r/»
No excess emissions.		e) Unknown causes 1/1/2017 4/1/2017 Total
No excess emissions.		d) Other known causes 1/1/2017 4/1/2017
. No excess emissions.		embldorg seboorg (c) 71/20/17 71/20/14 Total
. No excess emissions.		b) Control equipment 1/1/2017 4/1/2017 Total
No excess emissions.		nwobinA2\quhsi2 (s \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	ЈАТОТ (2ЯН) ИОІТАЯОО	DATE/TIME
20S - TD/wwbcn		OLLUTANT MONITORED:
3-B-4		:(8)TINU NOISSIM
Etrst, 2017 AODFILE#: #0203 (AI ID 447)		ЕРОКТІИС QUARTER:

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

			00.0	lstoT
				e) Ликиоми с з изее
			00.0	lstoT
				d) Other known causes
			00'0	Total
				colibration AQ (c
			00.0	lstoT
				b) Non-monitor malfunction
			00.0	lstoT
				a) Monitor malfunction
		CAUSE/CORRECTIVE ACTION	DURATION (HRS)	amit\ataq
		202		POLLUTANT MONITORED:
		3-B-4 Fuel Gas Flow Rate		EMISSION UNIT(S):
_	AQD FILE # #0203 (AI ID 447)	First, 2017		:ЯЕТЯАИО ФИТЕР

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOx Flow	co	CO2	O2 T	RS H2S	HCL		Opacity	
REPORTING QUARTER:	First, 2017			_	MONITOR MODEL:	Fuel	Gas Flow 1	Rate/	FG H2S CEM	
FACILITY: St. Paul Park R	ofining Co. II	. c			MFR:					
St. Paul Park R	erining co. L.	<u> </u>	·	-						
EMISSION SUBJECT ITEM:	EQUI10			- -	1.6		hr - 3 hr	rolli	ng average	erage
EMISSION UNIT(S):	Platformer in	nterheater	#1	-	EMISSION	BASIS:	SIP for	r SO2	NAAQS	
ASSOCIATED ITEMS:	COMG9, COMG7	EQUI163,	EQUI187, S	STRU66	<u>.</u>					
					TOTAL OPE	ERATING HO ON UNIT:	URS 2160	<u> </u>		
A. EMISSION DATA SUMMA	RY				B. CEM PE	RFORMANCE	ESUMMARY	Y		
1 DURATION OF EXC	ESS EMISSIONS	(HRS)								
•		lb/hr	lb/mmbtu		i .	RATION OF (URING	
a) Startup/Shutdown		0.00	0.00	-		URCE OPER	•	6)		
b) Control equipment	t	0.00	0.00	-	1	Monitor malfur			0.00	ļ
c) Process problems		0.00	0.00	-		Von-monitor n			0.00	
d) Other known caus	es	0.00	0.00	_	1 '	QA calibration			0.00	
e) Unknown causes		0.00	0.00	_	1 '	Other known o			0.00	
f) Soot blowing		0.00	0.00	-	e) {	Jnknown caus	ses		0.00	
g) Fuel problems		0.00	0.00	-						
2 TOTAL DURATION (•	0.00	0.00	_		TAL DURATION			0.00	
3 PERCENT OF TOTA EXCESS EMISSION		0.00%	0.00%			RCENT OF TO M DOWNTIM			0.00%	
	FOR OPACITY, F	RECORD ALL	TIMES IN MI	NUTES	. FOR GAS	ES, RECORE	ALL TIMES	IN HO	URS.	
% Total Excess Emissions =		Total Duratio	on of Excess E	missio	ns / (Total Or	perating Time	- CEM Down	ntime)		
% Total CEM Downtime =		CEM Downti	ime / Total Op	eratino	Time	-				
			·	•						
										
If no exceedances: I certify the during the reporting period. I										
SUBMITTED BY:	See certifica	ation page	at front o	of rep	ort		DATE:			

REPORTING QUARTER:		First, 2017 AQDFILE# #0203 (A1 ID 447)
EMISSION UNIT(S):		3-B-7
POLLUTANT MONITORED:		S02 - lb/hr
	TOTAL	
	DURATION	
DATE/TIME	(HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown		
1/1/2017		
4/1/2017		_No excess emissions.
Total	0.00	
b) Control equipment		
1/1/2017		
4/1/2017		_No excess emissions.
Total	0.00	
c) Process problems		
1/1/2017		
4/1/2017		No excess emissions.
Total	0.00	
d) Other known causes		
1/1/2017		
4/1/2017		_ No excess emissions.
Total	0.00	
e) Unknown causes		
1/1/2017		
4/1/2017		_No excess emissions.
Total	0.00	
f) Soot blowing		
1/1/2017		
4/1/2017		_No excess emissions.
Total	0.00	
g) Fuel problems		
1/1/2017		
4/1/2017		_No excess emissions.
Total	0.00	

REPORTING QUARTER:		First, 2017	AQD FILE #:	#0203 (AI ID 447)	
EMISSION UNIT(S):		3-B-7			
POLLUTANT MONITORED:		S02 - 1b/mmbtu			
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION		
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
b) Control equipment 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.			
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.			
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.			
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		3-B-7 Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total -	0.00	_	
b) Non-monitor malfunction			
Total -	0.00	_	
c) QA calibration			
Total	0.00		
d) Other known causes			
Tota!	0.00	_	
e) Unknown causes			
Total -	0.00	_	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOx Flow	со	CO2 -	O2 MONITO	TRS	H2S	HCL	Opacity	
REPORTING QUARTER:	First, 2017			_	MODEL:	K	Fuel Gas	Flow Rate	e/FG H2S CEM	
FACILITY: St. Paul Park R	efining <u>Co</u> . LL	c		_	MFR: _					
EMISSION SUBJECT ITEM:	EQUI11			-		1.08 1		3 hour r	E: olling average ur rolling average	
EMISSION UNIT(S):	Platformer In	terheater #	2	-	EMISSIC	N BASI	S : <u>s</u>	SIP for SC	2 NAAQS	
ASSOCIATED ITEMS:	COMG9, COMG7,	EQUI163, E	QUI188, ST	RU65	-					
					TOTAL O		ING HOURS NIT:	2160		
A. EMISSION DATA SUMMA	NRY				В. СЕМ	PERFOR	RMANCE SU	MMARY		
1 DURATION OF EXC	ESS EMISSIONS (HRS)	-							
		lb/hr	lb/mmbtu		1 [DURATI	ON OF CEM	DOWNTIME	DURING	
a) Startup/Shutdown		0.00	0.00	_		SOURCE	E OPERATIO	N (HRS)		
b) Control equipment	t	0.00	0.00	_		a) Monito	or malfunction	۱ _	0.00	
c) Process problems		0.00	0.00	_	1	o) Non-n	nonitor malfu	nction	0.00	
d) Other known caus	es	0.00	0.00		(c) QA ca	libration		0.00	
e) Unknown causes		0.00	0.00			d) Other	known cause	es	0.00	
f) Soot blowing		0.00	0.00	_		e) Unkno	own causes	-	0.00	
g) Fuel problems		0.00	0.00	-		-		_		
2 TOTAL DURATION (HRS)	0.00	0.00	•	2 -	TOTAL (OURATION (I	HRS)	0.00	
3 PERCENT OF TOTA	,			•	1		T OF TOTAL	-		
EXCESS EMISSION		0.00%	0.00%	-	l		WNTIME	_	0.00%	
	FOR OPACITY, R	ECORD ALL T	IMES IN MIN	UTES.	FOR GA	SES, R	ECORD ALL	TIMES IN H	OURS.	
% Total Excess Emissions =		Total Duration	n of Excess E	mission	ns / (Total	Operati	ng Time - CE	M Downtime)	
% Total CEM Downtime =		CEM Downtii	me / Total Op	erating	Time					
NOTES:										
										
If no exceedances: I certify the during the reporting period. I										edances
SUBMITTED BY:	See certifica	tion page a	at front of	frepo	ort		_	DATE: _		

REPORTING QUARTER:		First, 2017	AQD FILE #	#0203 (AI ID 447)	
EMISSION UNIT(S):		3-B-8		<u>.</u>	
POLLUTANT MONITORED:		S02 - lb/hr			
D. 4 TO 071145	TOTAL	MAY CONCENTRATION CAME	(OODDECTIVE ACTION		
DATE/TIME	DURATION (HRS) MAX. CONCENTRATION CAUSE	CORRECTIVE ACTION		
a) Startup/Shutdown					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	_			
b) Control equipment					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	_			
c) Process problems					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00				
d) Other known causes					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	_			
e) Unknown causes					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	-			
f) Soot blowing					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	_			
g) Fuel problems					
1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00	-			

REPORTING QUARTER:		First, 2017	AQD FILE #	#0203 (AI ID 447)	
EMISSION UNIT(S):		3-B-8		_	
POLLUTANT MONITORED:		S02 - lb/mmbtu			
DATE (TIME	TOTAL	MAY CONCENTRATION OF	LICE/CORDECTIVE ACTION		
DATE/TIME	DURATION (HRS	MAX. CONCENTRATION CA	USE/CORRECTIVE ACTION	······································	
a) Startup/Shutdown 1/1/2017					
4/1/2017		No excess emissions.			
Total	0.00				
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.			
Total	0.00				
c) Process problems 1/1/2017 4/1/2017		_No excess emissions.			
Total	0.00				
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.			
4/1/2017 Total	0.00	140 600655 61115510115.			
IUlai	0.00				

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		3-B-8 Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	_	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

· · · · · · · · · · · · · · · · · · ·	O2 NOx	co	CO2	O2 TRS	H2S	HCL	Opacity	
REPORTING QUARTER: First,	2017		_	MONITOR MODEL:	Fuel Gas	Flow Rat	e/FG H2S CEM	
EAGUETA:				AAEM.				
FACILITY: St. Paul Park Refining	Co II.C			MFR:				
St. Faul Park Nellining	CO. ALC		-					
			-	EMISSION LIMIT	AND AVERA	GE TIME:		
EMISSION SUBJECT ITEM: EQUI12			_	0.76 lb	S02/hr - :	3 hour ro	lling average	
				0.030 1	SO2/mmbt	u - 3 hou	r rolling averag	ge
	rizer Heater		-	EMISSION BASIS	: <u>.</u>	SIP for S	02 NAAQS	
Heater	34-B-1		-					
ASSOCIATED ITEMS: COMG7,	COMG14, EQUI163	. EOUI189. MR	029. STRU64					
	300117 5001100	/ =202103/ 11.	025, 021001	-				
				TOTAL OF	PERATING H	IOURS		
				OF EMISS	SION UNIT:		2160	
				_				
A. EMISSION DATA SUMMARY				B. CEM Performa				
DURATION OF EXCESS EMIS	SSIONS (HRS)				N OF CEM D		DURING	
1		lb/hr	lb/mmtbu	SOURCE	OPERATION	N (HRS)	Fuel Ora	
a) Startup/Shutdown b) Control equipment		0.00	0.00	a) Manita	r malfunation		Fuel Gas	
c) Process problems		0.00	0.00	-	r malfunction onitor malfund	ction	0.00	
d) Other known causes		0.00	0.00	c) QA cali		CHOIT	0.00	
e) Unknown causes		0.00	0.00	-	nown causes	3	0.00	
f) Soot blowing		0.00	0.00	e) Unknov			0,00	
g) Fuel problems		0.00	0.00]				
2 TOTAL DURATION (HRS)		0.00	0.00	2 TOTAL DI	URATION (H	RS)	0.00	
3 PERCENT OF TOTAL				3 PERCENT	T OF TOTAL			
EXCESS EMISSIONS		0.00%	0.00%	CEM DOV	NNTIME		0.00%	
								
FOR OP	ACITY, RECORD AL	L TIMES IN MIN	UTES. FOR G	ASES, RECORD AL	L TIMES IN	HOURS.		
% Total Excess Emissions =	Total Durat	ion of Excess En	nissions / (Total	Operating Time - C	EM Downtime	e)		
% Total CEM Downtime = NOTES:	CEM Dowr	ntime / Total Ope	rating Time					
			 .					
	·· ···································							
If no exceedances: I certify that the require the reporting period. I certify that I am for								eedances during

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 34-B-1		_
POLLUTANT MONITORED:		SO2 lb/hr		
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
DATE/TIME	(FINS)	WAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
b) Control equipment 1/1/2017 4/1/2017	0.00	_No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017	0.00	_No excess emissions.		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 34-B-1		_
POLLUTANT MONITORED:		SO2 lb/mmbtu	,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	
	TOTAL DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017 Totai	0.00	_No excess emissions.		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 34-B-1	
POLLUTANT MONITORED:		Fuel Gas Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	_	
b) Non-monitor malfunction			
Total	0.00	_	
c) QA calibration			
Total	0.00	_	
d) Other known causes			
Total	0.00	_	
e) Unknown causes			
Total	0.00	_	

AQDFILE#: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one): SO2 NO	c co	CO2	02	TRS	H2S	HCL	Opacity	
Other: Flow								
		_	MONITO	R				
REPORTING QUARTER: First, 2017		_	MODEL:		Fuel Gas	Flow Rat	e/FG H2S CEM	
FACILITY:			MFR:					
St. Paul Park Refining Co. LLC								
		_						
		_	EMISSIO	N LIMIT	AND AVER	AGE TIME:		
EMISSION SUBJECT ITEM: EQUI13		_		76.50 1	b S02/hr	- 3 hour	rolling avera	ige
				0.90 lb	SO2/mmbt	u - 3 hou	r rolling ave	rage
EMISSION UNIT(S): Hot Oil Heater			EMISSIC	N BASIS	:	SIP for S	02 NAAOS	
Heater 34-B-2		-			•			
		_						
ASSOCIATED ITEMS: COMG7, COMG14, EC	OUI163, EQUI190	, EQUI191,	STRU64					
			ODERAT	INC HOL	IDS OF EM	ISSION UNI	r.	
			OPERAI	ING HOL	JKS OF EIVI	Total	Fuel Gas	Fuel Oil
						2160	2160	0
					-			
A. EMISSION DATA SUMMARY			B. CEM	Performa	nce Summ	ary		
DURATION OF EXCESS EMISSIONS (HRS	5)		1 1	DURATIO	N OF CEM	DOWNTIME	DURING	
1 4	lb/hr	lb/mmbtu	1 .	COLLDOK	OPERATIO	N (HRS)		
1	10/111	ib/iiiiibtu	1 '	SOURCE	OFLINATIO	14 (11110)		
a) Startup/Shutdown	0.00	0.00	_			` ,	Fuel Gas	Fuel Oil
I			_		r malfunctio	` ,	Fuel Gas	Fuel Oil
a) Startup/Shutdown b) Control equipment c) Process problems	0.00	0.00		a) Monitor b) Non-m	r malfunctio onitor malfu	n		
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes	0.00 0.00 0.00	0.00		a) Monito b) Non-m c) QA cali	r malfunctio onitor malfu bration	nction	0.00	0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00		a) Monito b) Non-m c) QA cali d) Other k	r malfunctio onitor malfu bration known cause	nction	0.00 0.00 0.00 0.00	0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes	0.00 0.00 0.00	0.00 0.00 0.00		a) Monito b) Non-m c) QA cali d) Other k	r malfunctio onitor malfu bration	nction	0.00	0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00		a) Monito b) Non-m c) QA cali d) Other k	r malfunctio onitor malfu bration known cause	nction	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS)	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00	2	a) Monito b) Non-mo c) QA cali d) Other k e) Unknow	r malfunctio onitor malfu ibration known cause wn causes URATION (n nction es	0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	2 3 1	a) Monitor b) Non-mi c) QA cali d) Other k e) Unknov TOTAL D PERCEN	r malfunctio onitor malfu ibration known cause wn causes URATION (T OF TOTA	n nction es	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS)	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00	2 3 1	a) Monito b) Non-mo c) QA cali d) Other k e) Unknow	r malfunctio onitor malfu ibration known cause wn causes URATION (T OF TOTA	n nction es	0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	2-31	a) Moniton b) Non-ma c) QA cali d) Other la e) Unknow TOTAL D PERCEN' CEM DO	r malfunctio onitor malfu bration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	2-31	a) Moniton b) Non-ma c) QA cali d) Other la e) Unknow TOTAL D PERCEN' CEM DO	r malfunctio onitor malfu bration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00	2-31	a) Moniton b) Non-ma c) QA cali d) Other la e) Unknow TOTAL D PERCEN' CEM DO	r malfunctio onitor malfu bration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00	2 · 3	a) Monito b) Non-mi c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	2 · 3	a) Monito b) Non-mi c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	2 · 3	a) Monito b) Non-mi c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	2 · 3	a) Monito b) Non-mi c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	2 · 3	a) Monito b) Non-mi c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	2 · 3	a) Monito b) Non-mi c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00%	2 · 3	a) Monito b) Non-m c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV	r malfunction conitor malful ibration known causes URATION (TOF TOTA WNTIME	n netion es HRS) L	0.00 0.00 0.00 0.00 0.00 0.00	0.00 0.00 0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL EXCESS EMISSIONS FOR OPACITY, RECO	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00% MINUTES. FOI	R GASES,	a) Monito b) Non-m c) QA cali d) Other k e) Unknow TOTAL D PERCEN' CEM DOV RECORE g Time - C	r malfunction conitor malful bration known causes URATION (TOF TOTA WNTIME DALL TIME	n nction es HRS) L S IN HOURS me)	0.00 0.00 0.00 0.00 0.00 0.00 0.00%	0.00 0.00 0.00 0.00 0.00 0.00

REPORTING QUARTER:		First, 2017		AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 34-B-2		-
POLLUTANT MONITORED:		SO2 lb/hr	· · · · · · · · · · · · · · · · · · ·	
	TOTAL			
	DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017				
4/1/2017 _		No excess emissions.		
Total	0.00	-		
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	=		

REPORTING QUARTER:		First, 2017		AQDFILE# #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 34-B-2	·····	_
POLLUTANT MONITORED:		SO2 lb/mmbtu		
	TOTAL			
	DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	- `		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_		
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)	
EMISSION UNIT(S):		Heater 34-B-2		
POLLUTANT MONITORED:		Fuel Gas Flow Rate		
DATECTIAG	TOTAL DURATION	CALLOS (CORRECTIVE ACTION		
DATE/TIME	(HRS)	CAUSE/CORRECTIVE ACTION		
a) Monitor malfunction				
Total	0.00	-		
b) Non-monitor malfunction				
b) (tol) (lionitol lilandilonoli				
Total	0.00	-		
c) QA calibration				
	,	_		
Total	0.00			
d) Other known causes				
Total	0.00	-		
e) Unknown causes				
T-1-1		-		
Total	0.00			

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 34-B-2	
POLLUTANT MONITORED:		Fuel Oil Flow Rate	
	TOTAL DURATION		
DATE/TIME	(HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle oné):	SO2 Other:	NOX	CO	CO2 -	O2 TRS H	H2S	HCL	Opacity	
REPORTING QUARTER:	First, 2017				MFR: ABB				
				-	Model: Advance	Optima	Limas 1	11	
FACILITY:						-			
St. Paul Park Re	fining Co. I	LC		-					
				-	EMISSION LIMIT A				
								y rolling average	
EMISSION SUBJECT ITEM:	EQUI14			-		rolling	g avg. e	ffective 10/17/08	
EMICCION LINIT(C):	Heater 32-E	ı - 1			EMISSION BASIS:				
EMISSION UNIT(S):	neuter 32 E			-	Consent De	cree			
ASSOCIATED ITEMS:									
ACCOUNTED HEMO.				-					
					TOTAL OPERATIN	IG HOUR	RS		
					OF EMISSION UNI	T:	2160		
A. EMISSION DATA SUMMA	ARY				B. CEM PERFORM	MANCE S	UMMARY		
1 DURATION OF EXCE	SS EMISSIONS	(HRS)							
[365 day			1 DURATION C	OF CEM I	DOWNTIM	E DURING	
a) Startup/Shutdown		0.00			SOURCE OP	PERATIO	N (HRS)	ļ	
b) Control equipment		0.00			a) Monitor ma			0.00	
c) Process problems		0.00			b) Non-monito		ection	0.00	
d) Other known cause	s	0.00			c) QA calibrat			2.00	
e) Unknown causes		0.00			d) Other know		s	0.00	
f) Soot blowing		0.00			e) Unknown causes 0.00				
g) Fuel problems		0.00							
2 TOTAL DURATION (F	•	0.00			2 TOTAL DURA	,	,	2.00	
3 PERCENT OF TOTAL					3 PERCENT O		-		
EXCESS EMISSIONS	;	0.00%			CEM DOWN	TIME		0.09%	
							-	<u>-</u>	
	FOR OPACITY	, RECORD AL	L TIMES	IN MI	NUTES. FOR GASE	S, RECC	ORD ALL T	IMES IN HOURS.	
% Total Excess Emissions =		Total Duration	of Exces	s Emis	sions / (Total Operat	ting Time	~ CEM Do	wntime)	
% Total CEM Downtime ≂		CEM Downtim	ne / Total (Operat	ing Time				
NOTES:									
If no exceedances: I certify the no exceedances during the reinformation is valid.								pest of my knowledge there were the best of my knowledge the	
SUBMITTED BY:	See certifi	cation page	at fro	ont o	f report	D	ATE:		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)			
EMISSION UNIT(S):		Heater 32-B-1 (EQ	QUI14)				
POLLUTANT MONITORED:		NOx (365 day roll	ling avg) and 02				
DATE/TIME	DURATION	CONCENTRATION	CAUSE/CORRECTIV	/E ACTION			
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.					
Total	0.00	-					
b) Control equipment 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.					
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.					
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.					
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.					
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.					
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.					

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 32-B-1 (EQUI14)	
POLLUTANT MONITORED:		NOx and O2	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
	(1113)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total -	0.00	-	
b) Non-monitor malfunction			
Totai -	0.00	-	
c) QA calibration			
1/9/2017 11:00 1/9/2017 13:00	2.00	Quarterly calibration gas audit.	
Total	2.00	-	
d) Other known causes			
Total -	0.00	-	
	0.00		
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2	NOx	CO	CO2	02	TRS	H2\$	HCL	Opacity
	Other:	Flow							
				_	MONITOR				
REPORTING QUARTER:	First, 2017			_	MODEL:		Fuel Gas F	Flow Rate/I	FG H2S CEM
EAOU ITA					AACD.				
FACILITY:	Fining Co. II.C				MFR: _				
St. Paul Park Re	rining co. mc			-					
				-	EMISSION	LIMIT A	AND AVERAG	E TIME:	
EMISSION SUBJECT ITEM:	EQUI14				2.97 lb	502/hr	- 3 hour r	colling ave	erage
				_			mbtu - 3 ho		
									Effective 9-10-2009)
EMISSION UNIT(S):	HDH Heater			_					
	32-B-1			_					
1000011770177110									
ASSOCIATED ITEMS:	OUT163 HOUT10	o comprises							
COMG7, COMG14, E	Q01163, EQ0119.	2, SIK003		-					
•					TOTAL OP	ERATIN	IG HOURS		
					OF EMISS			2160	
									<u> </u>
A. EMISSION DATA SUMMA							nce Summar		
DURATION OF EXC	ESS EMISSIONS (HRS)			1		ON OF CEM D		DURING
1			lb/hr	lb/m m btu	8	SOURCE	E OPERATION	N (HRS)	
a) Startup/Shutdown			0.00	0.00	-				Fuel Gas
b) Control equipment c) Process problems		-	0.00	0.00	٦.	,	or malfunction	-4:	0.00
d) Other known caus	ae	-	0.00	0.00	4	•	nonitor malfund slibration	CHOIT	2.00
e) Unknown causes	53	-	0.00	0.00	4	•	known causes	2	0.00
f) Soot blowing		_	0.00	0.00	-	,	own causes	-	0.00
g) Fuel problems		-	0.00	0.00	1	,			
2 TOTAL DURATION (HRS)	_	0.00	0.00	7 27	TOTAL D	DURATION (HI	RS)	2.00
3 PERCENT OF TOTA	L	_] 3 F	PERCEN	NT OF TOTAL		
EXCESS EMISSION	3	_	0.00%	0.00%	_ (CEM DO	OWNTIME		0.09%
					<u> </u>				
	FOR OPACITY, I	RECORD ALL	TIMES IN MI	NUTES. FOR	GASES, RE	CORD	ALL TIMES IN	HOURS.	
								,	
% Total Excess Emissions =		Total Duration	of Excess En	nissions / (Tota	al Operating	Time - C	CEM Downtime	e)	
NOTES:									
If no averagenous: I continue	at the required and	lucae ware ma	de that I am f	familiar with th	a raculta	d that to	the best of m	ne knowlodaa	there were no exceedances during
the reporting period. I certify the									
SUBMITTED BY:	See certifica							DATE:	
							_		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		32-B-1	-
POLLUTANT MONITORED:		S02 lb/hr	
	TOTAL		
DATE/TIME	DURATION (HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown			
1/1/2017			
4/1/2017_		_No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_	
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
d) Other known access			
d) Other known causes 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
a) I believe and a			
e) Unknown causes 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/ 3001 blowing 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		_No excess emissions.	
Total	0.00	_	

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		32-B-1		
POLLUTANT MONITORED:		SO2 lb/mmbtu		
	TOTAL DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017				
4/1/2017 _ Total	0.00	_No excess emissions.		
iotai	0.00			
b) Control equipment				
1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_ 140 EXCESS CITIOSIONS.		
c) Process problems				
1/1/2017				
4/1/2017 _		_ No excess emissions.		
Total	0.00			
d) Other known causes				
1/1/2017				
4/1/2017 _		_No excess emissions.		
Total	0.00			
e) Unknown causes				
1/1/2017				
4/1/2017 _		_No excess emissions.		
Total	0,00			
f) Soot blowing				
1/1/2017				
4/1/2017 _		No excess emissions.		
Total	0.00			
g) Fuel problems				
1/1/2017				
4/1/2017 _		_ No excess emissions.		
Total	0.00			

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 32-B-1	
POLLUTANT MONITORED:		Fuel Gas Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
_		_	
Total	0.00	_	
b) Non-monitor malfunction			
<u>-</u>		_	
Total	0.00		
c) QA calibration 3/29/2017 8:00			
3/29/2017 10:00_	2.00	_Annual meter calibration.	
Total	2.00		
d) Other known causes			
		_	
Total	0.00		
e) Unknown causes			
<u> </u>		_	
Total	0.00		

AQD FILE#: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	CO	CO2	02	TRS	H2S	HCL	Opacity	
	Other: I	Flow								
DEDODTING OUADTED	Di 2017				MONITOR MODEL:	R	D2 G-		- /EG NOG GE	
REPORTING QUARTER:	First, 2017			•	MODEL:		Fuel Ga	s Flow Ra	te/FG H2S CE	м
FACILITY:					MFR: _					
St. Paul Park I	Refining Co.	LLC		•						
		······		•	EMISSION	N I IMIT .	AND AVER	AGE TIME:		
EMISSION SUBJECT ITEM:	EQUI15								rolling aver	age
).90 lk	SO2/mml	otu - 3 ho	ur rolling a	verage
EMISSION UNIT(S):	Dehex Reboi				ENNOGIGE			6		
	Heater 10-B	-1			EMISSIO	N BASIS	:	SIP for S	SO2 NAAQS	
ASSOCIATED ITEMS:	COMG7, COMG	14, EQUI163	, EQUI1	93, EQUI19	4, STRU9					
				<u></u>						
					OPERAT	ING HO	URS OF EN	MISSION UNI		Pos-1 0/3
								Total 2160	Fuel Gas 2160	Fuel Oil 0
					_	_			2100	
A. EMISSION DATA SUMMA							nce Sumn			
DURATION OF EXC	ESS EMISSIONS	S (HRS)	lla/lau	lle free me le éc e	l .			M DOWNTIM	E DURING	'
a) Startup/Shutdown			lb/hr 0.00	lb/mmbtu 0.00	*	SOURCE	OPERATI	ON (HKS)	Fuel Gas	Fuel Oil
b) Control equipmen		_	0.00	0.00	- a) Monito	r malfunction	on	0.00	0.00
c) Process problems			0.00	0.00] 6) Non-m	onitor malf	unction	0.00	0.00
d) Other known caus	es		0.00	0.00) QA ca	libration		0.00	0.00
e) Unknown causes			0.00	0.00	-1	•	known caus	ses	0.00	0.00
f) Soot blowing			0.00	0.00		e) Unkno	wn causes		0.00	0.00
g) Fuel problems			0.00	0.00			 —			
2 TOTAL DURATION	•		0.00	0.00	4		DURATION	, ,	0.00	0.00
3 PERCENT OF TOTAL EXCESS EMISSION			0.00%	0.00%	1		IT OF TOT. WNTIME	AL	0.00%	0.00%
EXCEOS ENICOION	O		0.00%	0.00%	1 `	JEINI DO	VV 4 1 11 11 11 11		0.00%	0.00%
	FOR OPACITY,	RECORD ALL	TIMES IN	MINUTES. F	OR GASE	S, RECC	ORD ALL T	IMES IN HOU	IRS.	
% Total Excess Emissions =	Ŧ	otal Duration of	of Excess E	Emissions / (T	otal Operat	ting Time	e - CEM Do	wntime)		
NOTES: There was zero	fuel oil run	time during	ar the on	arter.						
			<u>,</u>							
				-··- <u>-</u> -						
If no exceedances: I certify the exceedances during the report										
SUBMITTED BY:	See certifi	•					_	DATE:		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 10-B-1	
POLLUTANT MONITORED:		SO2 lb/hr	
	TOTAL		
	DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_	
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		_No excess emissions.	
Total	0.00		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 10-B-1	-
POLLUTANT MONITORED:		SO2 lb/mmbtu	
	TOTAL		
	DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	
a) Startun/Shutdown			
a) Startup/Shutdown 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017_		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	NO excess entissions.	
Total	0.00		
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	•	
e) Unknown causes			
1/1/2017		Na access aminates	
4/1/2017 ₋ Total	0.00	No excess emissions.	
iotai	0.00		
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017		No overes emissions	
4/1/2017 _	0.00	No excess emissions.	
Total	0.00		

REPORTING QUARTER:		First, 2017	AQD FILE #: _#	0203 (AI ID 447)	
EMISSION UNIT(S):		Heater 10-B-1			
POLLUTANT MONITORED:		Fuel Gas Flow Rate			
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION			
	(11110)	OADDE/CORRECTIVE ACTION			-
a) Monitor malfunction					
Total	0.00	-			
b) Non-monitor malfunction					
		_			
Total	0.00				
c) QA calibration					
Total	0.00	-			
d) Other known causes	0.50				
u) Other known causes					
Total	0.00	-			
e) Unknown causes					
Total	0.00	_			

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		Heater 10-B-1	
POLLUTANT MONITORED:		Fuel Oil Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
	(TINO)	CAUSE/CONNECTIVE ACTION	·
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
		-	
Total	0.00		
d) Other known causes			
Total	0.00	-	
e) Unknown causes	5.55		
e) onniown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 NO: Other: <u>so2</u>		O2 TRS	H2S HCL	Opacity		
REPORTING QUARTER:	First, 2017			MONITOR MODEL:	Advance Limas 1 Magnos 106 - 02		
FACILITY: St. Paul Park Rei	Fining Co. LLC			MFR:	ABB	-	
EMISSION SUBJECT ITEM:	EQUI0000000016			EMISSION L	IMIT AND AVERAGE T	NME: 2 hour rolling average	
EMISSION UNIT(S):	#2 SRU/SCOT uni	-		EMISSION B	BASIS: NSPS Subpart J		
ASSOCIATED ITEMS:	TREA12, COMG8, 1	SQUI166, EQUI167,	STRU81			a MACT Subpart UUU	
PROCESS UNIT DESCRIPTION: EQUI16 is a Claus Sulfur Recovery Unit with a Tail Gas Treating Unit. The train includes the SRU Incinerator. The sulfur unit is designed to process 50 LTPD. TOTAL OPERATING HOURS OF EMISSION UNIT: 2160							
A. EMISSION DATA SUMMAR	Y		B. CEM PERFORM	MANCE SUMMARY		C. SRU BYPASS INFORMATION	
1 DURATION OF EXCE a) Startup/Shutdown b) Control equipment c) Process problems d) Other known cause e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (F) 3 PERCENT OF TOTAL EXCESS EMISSIONS	s IRS)	0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.0	SOURCE (a) Monitor (b) Non-mo (c) QA calib (d) Other kr (e) Unknow (2 TOTAL DL) (3 PERCENT (CEM DOWN)	nown causes IRATION (HRS) OF TOTAL	0.00 0.00 1.00 12.00 0.00 13.00 0.60%	1 DURATION OF BYPASS a) Process Problems b) Other known causes c) Unknown causes 0.00 0.00 2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL OPERATION HOURS 0.00%	
	CEM es are noted in this se n events, a value equ	Downtime / Total Operaction. al to 1.5x the high calib	ating Time	ating Time - CEM Down	·	over that value since measured	
If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.							
SUBMITTED BY:	See certification	on page at front o	of report	DATE:		-	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		#2 SRU/SCOT unit	
POLLUTANT MONITORED:		S02 (ppm)	
	TOTAL	MAX. CONCEN.	
		(ppm, 12-hr average)	
DATE/TIME	(HRS)	and recalc	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_ NO excess emissions.	
lotai	0.00		
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
 d) Other known causes 			
Total	0.00	No excess emissions.	
(Otal	0.00		
e) Unknown causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	
a) Firel carblema			
g) Fuel problems			
1/1/2017 4/1/2017		No excess emissions.	
4/1/2017	0.00	_ivo excess emissions.	
lotai	0.00		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		#2 SRU/SCOT unit	
POLLUTANT MONITORED:		SO2	
Dave wilder	TOTAL DURATION	ONLIGE (OODDECTINE ACTION	
DATE/TIME	(HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	•	
b) Non-monitor malfunction			
Total	0.00		
c) QA calibration			
1/10/17 13:00			
1/10/17 14:00	1.00	Quarterly CGA.	
Total	1.00	•	
d) Other known causes			
1/28/2017 0:00			
1/28/2017 9:00	9.00	Communications issue. Missing data.	
2/28/17 13:00			
2/28/17 15:00	2.00	Preventive maintenance followed by calibrati	on and validation.
3/26/2017 8:00 3/26/2017 9:00	1.00	Maintananas completed en comple austeur f	Married by actionalism and validation
3/26/2017 9.00	12.00	Maintenance completed on sample system for	blowed by calibration and validation.
e) Unknown causes			
Tatal	0.00		

CONTINUOUS EMISSION MONITOR SRU BYPASS INFORMATION

REPORTING QUART	TER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):			#2 SRU/SCOT unit	· -
POLLUTANT MONIT	ORED:		Bypass (Acid gas)	
DATE/TIME		TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Process problems Total	1/1/2017 4/1/2017	0.00	No bypasses that resulted in excess emissions.	
b) Other known cause	es 1/1/2017 4/1/2017	0.00	_No bypasses that resulted in excess emissions.	
b) Unknown causes Total	1/1/2017 4/1/2017	0.00	No bypasses that resulted in excess emissions.	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx	co co	02 02 TRS	H2S HCL	Opacity	
				MONITOR	Advance Limas 11	S02	
REPORTING QUARTER:	First, 2017			MODEL:	Magnos 106 - 02		
FACILITY:				MFR: ABB			
St. Paul Park Re	efining Co. LLC						
				EMISSION LIMIT	AND AVERAGE TIME:		
EMISSION SUBJECT ITEM:	EQUI16			45.0 1	b SO2/hr - 1 hour a	verage	
				15.0 1	b SO2/hr - 3 hour re	olling average	
EMISSION UNIT(S):	#2 SRU/SCOT unit_						
				EMISSION BASIS	: MN Rule 7009.0020	- AAQS/SIP	
							
ASSOCIATED ITEMS:	TREA12, COMG8, EQUI	166, EQUI167, STRU14					
•							
				TOTAL OPERATI	NG HOURS		
				OF EMISSION UN	NIT: 2160		
A. EMISSION DATA SUMMA	ARY			B. CEM PERFOR	MANCE SUMMARY		
1 DURATION OF EXC	ESS EMISSIONS (HRS)						
		1 hr	3 hr	1 DURAT	ION OF CEM DOWNTIME	E DURING	
a) Startup/Shutdown		0.00	0.00	SOURC	E OPERATION (HRS)		
b) Control equipment		0.00	0.00	a) Monit	tor malfunction	0.00_	
c) Process problems		0.00	0.00	b) Non-r	monitor malfunction	0.00	
d) Other known caus	es	0.00	0.00	c) QA ca	alibration	1.00	
e) Unknown causes		0.00	0.00	d) Other	r known causes	12.00	
f) Soot blowing		0.00	0.00	e) Unkn	own causes	0.00	
g) Fuel problems		0.00	0.00				
2 TOTAL DURATION ((HRS)	0.00	0.00	2 TOTAL	DURATION (HRS)	13.00_	
3 PERCENT OF TOTAL	NL			3 PERCE	NT OF TOTAL		
EXCESS EMISSION	s	0.00%	0.00%	CEM DO	OWNTIME	0.60%	
}				1			
	FOR OPACITY, RECOR	O ALL TIMES IN MINUTES. FO	R GASES, RECOR	RD ALL TIMES IN HO	URS.		
				_			
% Total Excess Emissions =	Total Duration of Excess	s Emissions / (Total Operating T	ime - CEM Downtim	ne)			
% Total CEM Downtime =	CEN	Downtime / Total Operating Ti	me				
NOTE:							
	wmtime came ac renor	ted for #2 SRU/SCOT (E	II 019) 902 ppm			·	
19/11 502 614 40	WITE THE SUME US TOPOL	CCG 101 WZ BRS/BC01 (E	0 010/ BO2 pp.	· · · · · · · · · · · · · · · · · ·			
							
	If no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.						
SUBMITTED BY:	See certification p	age at front of report	-	-	DATE:		

REPORTING QUARTER.		First, 2017	AQD FILE #: #0203 (A1 1D 447)
EMISSION UNIT(S):		#2 SRU/SCOT unit	
POLLUTANT MONITORED:		SO2 (lbs/hr)	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (lbs/hr, 1-hr average) and ppm recalc	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017 _		_ No excess emissions.	
Total	0.00		
b) Control equipment 1/1/2017 4/1/2017 _		No excess emissions.	
Total	0.00		
c) Process problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	

EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		#2 SRU/SCOT unit	
POLLUTANT MONITORED:		SO2 (lbs/hr)	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCEN. (lbs/hr, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
b) Control equipment 1/1/2017 4/1/2017 _		No excess emissions.	
Total	0.00	-	
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
d) Other known causes			
Total	0.00 0.00	No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		#2 SRU/SCOT unit	
POLLUTANT MONITORED:		S02 (ibs/hr)	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
	SO2 lb/hr do	wntime same as reported for #2 SRU/SCOT (EU 019) SO2 ppm
a) Monitor malfunction			
Total	0.00	See #2 SCOT ppm page for details	
b) Non-monitor malfunction			
Total	0.00	See #2 SCOT ppm page for details	
c) QA calibration			
Total	1,00	See #2 SCOT ppm page for details	
d) Other known causes			
Total	12.00	See #2 SCOT ppm page for details	
e) Unknown causes			
Total	0.00	See #2 SCOT ppm page for details	

AQD FILE#: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	CO	CO2	O2	TRS	H2S	HCL	Opacity
	Other:	flow		-					
					MONITO	R			
REPORTING QUARTER:	First, 2017			-	MODEL:		Fuel Gas	Flow Ra	te/FG H2S CEM
FACILITY:					MFR:				
St. Paul Park R	Refining Co. LI	C		_	_				
				-					
EMISSION SUBJECT ITEM:	EQUI17						S AND AVER		
LIVINGSION GODDLOT IT LIVI.	FQUIII		······································	-	_				rolling average
EMISSION UNIT(S):	Guard Case Re	actor Heat	er	_	-				
	36-B-1			_	EMISSIO	N BASIS	s: <u>.</u>	SIP for	SO2 NAAQS
ACCOUNTED ITEMS									
ASSOCIATED ITEMS:	COMG9, COMG7,	EQUI163,	EQUI199, S	TRU62	-				
					TOTAL	OPERAT	ING HOURS		
					OF EMIS	SION UI	NIT:	2072	_
					,				
1 DURATION OF EXC		IDC)			B. CEM	PERFOR	RMANCE SUI	MMARY	
1 DURATION OF EXC	E33 EMISSIONS (F	lb/hr	lb/mmbtu		1	DURATI	ON OF CEM	DOWNTIM	F DURING
a) Startup/Shutdown		0.00	0.00				E OPERATIO		2 20111110
b) Control equipment	t	0.00	0.00	-	Į.		or malfunction	•	0.00
c) Process problems		0.00	0.00	-	[b) Non-n	nonitor malfu	nction	0.00
d) Other known caus	es	0.00	0.00			c) QA ca	alibration		0.00
e) Unknown causes		0.00	0.00	_		d) Other	known cause	es	0.00
f) Soot blowing		0.00	0.00	_	١ ،	e) Unkno	own causes		0.00
g) Fuel problems		0.00	0.00		Ì				
2 TOTAL DURATION	•	0.00	0.00	-	ı		DURATION (I		0.00
3 PERCENT OF TOTA							NT OF TOTA	L	
EXCESS EMISSIONS	S	0.00%	0.00%	-		CEM DO	WNTIME		0.00%
	FOR OPACITY, R	ECORD ALL	TIMES IN MINU	JTES.	FOR GAS	SES, RE	CORD ALL T	IMES IN H	DURS.
% Total Excess Emissions =		Total Duration	on of Excess E	missior	ns / (Total	Operation	ng Time - CE	M Downtim	e)
% Total CEM Downtime =		CEM Downti	me / Total Ope	erating '	Time				
NOTES:									
NOTES.									
If no evenedances: I contife the	at the required each	reac were me	da that I am f-	milion	with tha	oulto co	nd that to the !	hoot of mi-	vnowledge there were to
If no exceedances: I certify the exceedances during the report									knowledge there were no knowledge the information is valid.
SUBMITTED BY:	See certifica							DATE:	

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI_ID_447)
EMISSION UNIT(S):		36-B-1	·
POLLUTANT MONITORED:		S02 - 1b/hr	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	_110 00000 01110010110.	
c) Process problems 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
Total	0.00		
e) Unknown causes 1/1/2017 4/1/2017		_No excess emissions.	
Total	0.00		
f) Soot blowing 1/1/2017 4/1/2017	0.00	No excess emissions.	
Total	0.00		
g) Fuel problems 1/1/2017 4/1/2017		_ No excess emissions.	
Total	0.00		

REPORTING QUARTER:		First, 2017 AQDFILE# #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-1
POLLUTANT MONITORED:		SO2 - 1b/mmbtu
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017		_No excess emissions.
Total	0.00	
b) Control equipment 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-1 Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	_	
b) Non-monitor malfunction			
Total	0.00		
c) QA calibration			
Total	0.00	_	
d) Other known causes			
Total	0.00	_	
e) Unknown causes			
Total	0.00	_	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	со	CO2	O2	TRS	H2S	HCL	Opacity
	Other:	Flow		-					
DEDODTING OUADTED	D4				MONIT		D 1 C	. ml D	- /ng yag gny
REPORTING QUARTER:	First, 2017			-	MODEL		Fuel Gas	FIOW RA	te/FG H2S CEM
FACILITY:					MFR:				
St. Paul Park R	efining Co. L	LC		_					
				-					
ENGOLON OUR LEGE ITEM.					EMISSI		rs and avei		
EMISSION SUBJECT ITEM:	EÖÜTT8			-					rolling average our rolling average
EMISSION UNIT(S):	Reactor Char	ge Heater				0.030	1D 302/1111B	JCU - 3 11	our rorring average
	36-B-2,3,4			-	EMI\$SI	ON BASI	S:	SIP for S	SO2 NAAQS
				-			-		
ASSOCIATED ITEMS:	COMG9, COMG7	, EQUI163,	EQUI200,	STRU1:	2				
					TOTAL	ODEDAT			
						ISSION U	TING HOURS	2067	
					OI LIVII	OSION C		2007	-
A. EMISSION DATA SUMMA	RY				B. CEN	PERFO	RMANCE SU	JMMARY	
1 DURATION OF EXC	ESS EMISSIONS	(HRS)							
		lb/hr	lb/mmbtu		1		ION OF CEN		IE DURING
a) Startup/Shutdown		0.00	0.00	_			E OPERATION		
b) Control equipment		0.00	0.00	-		,	tor malfunctio		0.00
c) Process problems		0.00	0.00	-		,	monitor malfu	unction	0.00
d) Other known caus	es	0.00	0.00	-		,	alibration		0.00
e) Unknown causes		0.00	0.00	-		•	r known caus	es	0.00
f) Soot blowing		0.00	0.00	-		e) Unkn	own causes		0.00
g) Fuel problems	(UDC)	0.00	0.00	•	,	TOTAL	DUDATION	(LIDC)	0.00
2 TOTAL DURATION (3 PERCENT OF TOTAL	` '	0.00	0.00	-			DURATION (NT OF TOTA	. ,	0.00
EXCESS EMISSION		0.00%	0.00%		٥		INT OF TOTA	1 L	0.00%
EXCESS ENIISSION	3	0.00%	0.00%	-		CENID	OVVINTIBILE		0.00%
	FOR OPACITY,	RECORD AL	L TIMES IN M	INUTE:	S. FOR	GASES,	RECORD AL	L TIMES IN	HOURS.
% Total Excess Emissions =		Total Duration	on of Excess E	missior	ns / (Tota	al Operati	ing Time - Cf	EM Downtim	ne)
% Total CEM Downtime =		CEM Downti	me / Total Ope	erating	Time				
NOTES:									
	· · · · · · · · · · · · · · · · · · ·								
	-								
If no exceedances: I certify the exceedances during the report valid.	•	•							y knowledge there were no ny knowledge the information is
SUBMITTED BY:	See certific	ation page	at front	of re	port		_	DATE:	

REPORTING QUARTER	:	First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-2,3,4	
POLLUTANT MONITORE	ED:	S02 - 1b/hr	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdow 1/1/2 4/1/2 Total		_No excess emissions.	
b) Control equipme	nt	No excess emissions.	
Total	0.00		
c) Process problem 1/1/2 4/1/2 Total		No excess emissions.	
d) Other known cau 1/1/2 4/1/2	ises 2017	No excess emissions.	
Total	0.00	_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
e) Unknown causes 1/1/2 4/1/2	2017 2017	No excess emissions.	
Total	0.00		
f) Soot blowing 1/1/2 4/1/2 Total		No excess emissions.	
g) Fuel problems 1/1/2 4/1/2	2017	No excess emissions.	
Total	0,00		

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-2,3,4	
POLLUTANT MONITORED:		S02 - lb/mmbtu	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017		_ No excess emissions.	
Total b) Control equipment 1/1/2017 4/1/2017	0.00	_No excess emissions.	
Total c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.	

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-2,3,4 Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
		_	
Total	0.00	_	
b) Non-monitor malfunction			
Total	0.00		
	0.00		
c) QA calibration			
Total	0.00		
d) Other known causes			
•			
Total	0.00	_	
e) Unknown causes			
Total	0.00		

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	co	CO2	02	TRS	H2S	HCL	Opacity
	Other:	Flow		-					
					MONITO	DR			
REPORTING QUARTER:	First, 2017			-	MODEL	:	Fuel Gas	s Flow Ra	te/FG H2S CEM
FACILITY:					MFR:				
St. Paul Park F	Refining Co. LI	C							
				•					
				•	EMISSI	ON LIMIT	S AND AVE	RAGING TIM	1E:
EMISSION SUBJECT ITEM:	EQUI19			_		0.63 1	b SO2/hr_	- 3 hour	rolling average
						0.030	lb SO2/mm	btu - 3 l	nour rolling average
EMISSION UNIT(S):	Reactor Charg	e Heater							
	36-B-6E				EMISSI	ON BASIS	S:	SIP for	SO2 NAAQS
ASSOCIATED ITEMS:	COMG9, COMG7,	POUT 162	POUTO01 C	חסוומים					
ACCOCIATED IT LING.	COMBS, COMBS,	EQUITOS	EQUIZOI, S	IKOOO					
					TOTAL	OPERAT	ING HOURS	6	
					OF EMI	SSION U	NIT:	2160	
A. EMISSION DATA SUMMAI					B. CEM	PERFOR	RMANCE SU	MMARY	
1 DURATION OF EXC	ESS EMISSIONS (F	•	0.7. 14			D. (D. 4.7.)		. 50	IT DUDING
Charton (Chartalana		lb/hr	lb/mmbtu		1		ON OF CEN		E DURING
a) Startup/Shutdown	4	0.00	0.00	-			E OPERATION		0.00
b) Control equipmen c) Process problems		0.00	0.00	-		•	or malfunctic nonitor malfu		0.00
d) Other known caus		0.00	0.00	-		,	alibration	ancuon	1.00
e) Unknown causes		0.00	0.00	-		•	known caus	6 8	0.00
f) Soot blowing		0.00	0.00	•		•	own causes		0.00
g) Fuel problems		0.00	0.00	•		0, 01	544500		
2 TOTAL DURATION	(HRS)	0.00	0.00		2	TOTAL	DURATION	(HRS)	1.00
3 PERCENT OF TOTA	, ,			•			NT OF TOTA		
EXCESS EMISSIONS	S	0.00%	0.00%			CEM DO	OWNTIME		0.05%
	FOR OPACITY, R	ECORD ALL	TIMES IN MIN	UTES.	FOR G	ASES, RE	ECORD ALL	TIMES IN H	OURS.
% Total Excess Emissions =		Total Duratio	n of Excess E	mission	s / (Tota	al Operati	ing Time - Cl	EM Downtim	e)
% Total CEM Downtime =		CEM Downtii	me / Total Ope	ratina "	Time	•	-		•
		OLIVI DOWNIII	nie / rotal Ope	naung	inne				
NOTES:									
									
			* · · · · · · · · · · · · · · · · · · 						
If no exceedances: I certify the	at the required analy	ses were ma	de, that I am fa	miliar v	with the i	results, a	nd that to the	best of my	knowledge there were no
exceedances during the repor	ting period. I certify	that I am fam	iliar with the in	formati	on in thi	s report a	and that to the	e best of my	knowledge the information is valid.
SUBMITTED BY:	See certifica	tion page	at front c	f_rep	ort			DATE:	

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)	
EMISSION UNIT(S):		36-B-6E		
POLLUTANT MONITORED:		S02 - 1b/hr		
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown	()		o, ood oon to me.	
1/1/2017 4/1/2017		_No excess emissions.		
Total	0.00	_		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	-		
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		

REPORTING QUARTER:		First, 2017	AQD FILE #: 1	#0203 (AI ID 447)
EMISSION UNIT(S):		36-B-6E		
POLLUTANT MONITORED:		S02 - 1b/mmbtu		
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			
b) Control equipment 1/1/2017 4/1/2017	0.00	_ No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		3-B-6E Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total _	0.00	_	
b) Non-monitor malfunction			
Total	0.00	_	
c) QA calibration 2/15/2017 8:00 2/15/2017 9:00 _ Total	1.00 1.00	Annual meter calibration.	
d) Other known causes			
Total -	0.00	_	
e) Unknown causes			
Total _	0.00	-	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	co	CO2	O2	TRS	H2S	HCL	Opacity
	Other:	Flow							
					MONITO	R			
REPORTING QUARTER:	First, 2017				MODEL:		Fuel Gas	Flow Rat	e/FG H2S CEM
FACILITY:	61 / 6 756				MFR:				
St. Paul Park R	erining Co. LLC		·						
					EMISSIC	ON LIMIT	S AND AVEF	RAGING TIM	IE:
EMISSION SUBJECT ITEM:	EQUI20								rolling average
					•				our rolling average
EMISSION UNIT(S):	Reactor Charge	Heaters							
	36-B-6W				EMISSIC	ON BASIS	3 :	SIP for S	O2 NAAQS
ASSOCIATED ITEMS:	COMG9, COMG7,	EQUI163, E	QUI202, STR	J79					
					_				
							ING HOURS		
					OF EMIS	SSION UI	NII:	2160	-
A. EMISSION DATA SUMMA	RY				B. CEM	PERFOR	MANCE SU	MMARY	
1 DURATION OF EXC		RS)							
		lb/hr	lb/mmbtu		1	DURATI	ON OF CEM	DOWNTIM	E DURING
a) Startup/Shutdown		0.00	0.00			SOURC	E OPERATIO	ON (HRS)	
b) Control equipmen	t	0.00	0.00			a) Monito	or malfunctio	ก	0.00
c) Process problems		0.00	0.00			b) Non-n	nonitor malfu	nction	0.00
d) Other known caus	es	0.00	0.00		}	c) QA ca	libration		1.00
e) Unknown causes		0.00	0.00		Į.	d) Other	known cause	es	0.00
f) Soot blowing		0.00	0.00			e) Unkno	own causes		0.00
g) Fuel problems		0.00	0.00						
2 TOTAL DURATION ((HRS)	0.00	0.00		2	TOTAL D	DURATION (HRS)	1.00
3 PERCENT OF TOTA	AL				3	PERCEN	NT OF TOTA	L	
EXCESS EMISSION	S	0.00%	0.00%			CEM DC	WNTIME		0.05%
	FOR OPACITY, RE	ECORD ALL T	IMES IN MINU	TES.	FOR GAS	ES, REC	ORD ALL TI	IMES IN HO	URS.
% Total Excess Emissions =		Total Duratio	n of Excess Em	nission	s / (Total	Operating	g Time - CEN	M Downtime)
% Total CEM Downtime =		CEM Downti	me / Total Oper	ating	Time				
NOTES:									
If no exceedances: I certify the exceedances during the report valid.	•							•	•
SUBMITTED BY:	See certificat	ion page a	t front of	repor	-+			DATE	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AT ID 447)
EMISSION UNIT(S):		36-B-6W	
POLLUTANT MONITORED:		S02 - lb/hr	
	TOTAL		
DATE/TIME	DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
c) Process problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	140 62003 01113310113.	
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017	0.00	No excess emissions.	
Total	0.00		
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00		
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	•	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-6W	***************************************	
POLLUTANT MONITORED:		S02 - lb/mmbtu		
	TOTAL			
DATE/TIME	DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	140 exoces chilosions.		
d) Other known causes 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			
e) Unknown causes 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			
f) Soot blowing 1/1/2017 4/1/2017 Total		No excess emissions.		
i Otai	0.00			
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	110 600633 61113310113.		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		36-B-6W Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00		
b) Non-monitor malfunction			
Total	0.00		
c) QA calibration			
2/15/2017 10:00 2/15/2017 11:00	1.00	Annual meter calibration.	
Total	1.00	•	
d) Other known causes			
		-	
Total	0.00		
e) Unknown causes			
Total	0.00		
IOlai	U.UŲ		

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	CO	CO2	O2	TRS	H2S	HCL	Opacity
	Other:	Flow		_					
REPORTING QUARTER:	First 20	1 77			MONITO MODEL:	R	Fuel Coc	Plan Bat	-/EC USC CEM
REPORTING QUARTER.	First, 20	1/		-	WODEL.		ruel Gas	FIOW Rate	e/FG H2S CEM
FACILITY:					MFR:				
St. Paul Park F	Refining Co	. LLC		_					
	· · · · · · · · · · · · · · · · · · ·			-	EMISSIO	N LIMITS	S AND AVER	AGING TIME	- :
EMISSION SUBJECT ITEM:	EQUI21			_					colling average
				-	2	0.030	lb SO2/mmb	tu - 3 hc	our rolling average
EMISSION UNIT(S):		harge Heat	er	-	C1 410010				
	37-B-1	·		-	EMISSIO	N BASIS	s: <u>s</u>	IP for SC	02 NAAQS
ASSOCIATED ITEMS:	TREA20, T	REA21, COM	G7,_COMG8,	EQUI	163, EQ	UI203,	STRU89		
							-		
							ING HOURS		
					OF EMIS	SION UI	MII:	2160	_
A. EMISSION DATA SUMMA	RY				B. CEM I	PERFOR	MANCE SUN	MARY	
1 DURATION OF EXC	ESS EMISSIO	, ,							
		lb/hr	lb/mmbtu				ON OF CEMI		DURING
a) Startup/Shutdown		0.00	0.00	-			OPERATIO	, ,	
b) Control equipmen		0.00	0.00	-	ł	•	or malfunction nonitor malfur		0.00
c) Process problems d) Other known caus		0.00	0.00	-		c) QA ca		ICUON	0.00
e) Unknown causes	es	0.00	0.00	-		•	known cause	•	0.00
f) Soot blowing		0.00	0.00	_	l	•	wn causes	3	0.00
g) Fuel problems		0.00	0.00	-	,	o) Olikio	Wii Causes		
2 TOTAL DURATION	(HRS)	0.00	0.00	-	, , .	τοται τ	OURATION (F	HRS)	0.00
3 PERCENT OF TOTAL	. ,	0.00		-	1		IT OF TOTAL	•	
EXCESS EMISSION		0.00%	0.00%		CEM DOWNTIME 0.00%				
	FOR OPACIT	TY, RECORD	ALL TIMES IN	MINU	ES. FOR	GASES	S, RECORD A	ALL TIMES IN	N HOURS.
% Total Excess Emissions =		Total Duration	on of Excess E	missio	ns / (Tota	l Operati	ng Time - CE	M Downtime	2)
% Total CEM Downtime =		CEM Downti	me / Total Op	erating	Time				
NOTES:									
If no exceedances: I certify the									
exceedances during the repor	ting period. I d	ertify that I an	n familiar with	the info	rmation i	n this rep	ort and that t	o the best of	my knowledge the information is valid.
SUBMITTED BY:	See certi	fication p	age at fro	nt of	report		_ [DATE:	

REPORTING QUARTER:		First, 2017 AQDFILE# #0203 (AI ID 447)	
EMISSION UNIT(S):		37-B-1	
POLLUTANT MONITORED:		S02 - 1b/hr	
	TOTAL		
	DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	
h) Control occiomont			
b) Control equipment 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2017		Ma sures emissions	
4/1/2017		_No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
-\			
e) Unknown causes 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		37-B-1	
POLLUTANT MONITORED:		S02 - 1b/mmbtu	
	TOTAL DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_	
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_ TO CASSES STITLES TO THE	
e) Unknown causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_ NO BAGGGG GITTIGGTONG.	
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	110 0,0000 011110010110.	
a) Euol problema			
g) Fuel problems 1/1/2017			
4/1/2017		No excess emissions.	
4/ 1/20 1/ _ Total	0.00		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		37-B-1 Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx	CO	CO2	O2	TRS	H2S	HCL	Opacity	
REPORTING QUARTER:	First, 2017				MONITO MODEL:	R	Fuel Ga	s Flow Ra	te/FG H2S CEM	
FACILITY: St. Paul Park R	efining Co.	LLC		•	MFR: _					
EMISSION SUBJECT ITEM:	EQUI26					78 1	502/hr		ME: rolling average nour rolling average	
EMISSION UNIT(S):	Product Str 37-B-2	• •	EMISSION BASIS: SIP for SO2 NAAQS							
ASSOCIATED ITEMS:	TREA22, TRE	A23, COM	37, COMG8,	EQUI1	63, EQU	1204,	STRU88			
					TOTAL C		ING HOUR NIT:	2160	_	
A. EMISSION DATA SUMMA	RY				B. CEM	PERFOR	RMANCE S	UMMARY		
1 DURATION OF EXC	ESS EMISSION	. ,						·		
) O (O)		lb/hr	lb/mmbtu		ì				ME DURING	
a) Startup/Shutdown	_	0.00	0.00	•	l .		E OPERAT		0.00	
b) Control equipment	-	0.00	0.00		l	•	or malfuncti		0.00	
c) Process problemsd) Other known caus		0.00	0.00	•	b) Non-monitor malfunction 0.00 c) QA calibration 0.00					
e) Unknown causes	_	0.00	0.00	-	ŀ	•	known cau	S88	0.00	
f) Soot blowing	_	0.00	0.00	•	ŀ	,	wn causes		0.00	
g) Fuel problems	-	0.00	0.00	•)	5) O/Marie	7W11 Odd303			
2 TOTAL DURATION ((HRS)	0.00	0.00	•	2 7	TOTAL [DURATION	(HRS)	0.00	
3 PERCENT OF TOTA	` ′ -			•	ı		NT OF TOT			
EXCESS EMISSION:	s _	0.00%	0.00%		(CEM DC	WNTIME		0.00%	
	FOR OPACITY	, RECORD	ALL TIMES IN	MINU	ΓES. FOF	R GASE	S, RECORI	O ALL TIME:	S IN HOURS.	
% Total Excess Emissions =	7	Fotal Duration	on of Excess E	missior	ns / (Total	Operatir	ng Time - C	EM Downtin	ne)	
% Total CEM Downtime =	(CEM Downt	ime / Total Ope	erating	Time					
NOTES:										
110120.		·								
If no exceedances: I certify that no exceedances during the repaint information is valid.										
SUBMITTED BY:	See certifi	cation pa	ge at fron	t of	report		_	DATE:		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		37-B-2	
POLLUTANT MONITORED:		S02 - lb/hr	
	TOTAL		
	DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION C.	AUSE/CORRECTIVE ACTION
a) Ota tura (Oboutata e			
a) Startup/Shutdown			
1/1/2017		No avene emissions	
4/1/2017	0.00	No excess emissions.	
Total	0.00		
b) Control equipment		•	
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	TWO EXCESS CITIESIONS.	
iotai	0,00		
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
7 5141	0.00		
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	,
e) Unknown causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
0.0. 444			
f) Soot blowing			
1/1/2017		No system amingions	
4/1/2017 _	0,00	No excess emissions.	
Total	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		

REPORTING QUARTER:			First, 2017	A(QDFILE#: #0203 (AI ID 447)			
EMISSION UNIT(S):			37-B-2					
POLLUTA	ANT MONITORED:		S02 - lb/mmbtu					
		TOTAL DURATION						
	DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE AC	TION			
a) \$	Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.					
	Total	0.00	_					
b) (Control equipment 1/1/2017 4/1/2017		No excess emissions.					
	Total	0.00	-					
c) F	Process problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.					
d) (Other known causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.					
e) l	Jnknown causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.					
f) S	Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.					
g) F	uel problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.					

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		37-B-2 Fuel Gas Flow Rate	
POLLUTANT MONITORED:		S02	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	co	CO2	02	TRS	H2S	HCL	Opacity	
	Other:	Flow			MONITOR	,				
REPORTING QUARTER:	First, 2017	,	•		MODEL:		Fuel Gas F	low Rate/F	G H2S CEM	
						-				
FACILITY:					MFR: _					
St. Paul Park Re	efining Co. Ll	rc								
					EMISSIO	NI I I BAIT A	AND AVERAG	E TIME		
EMISSION SUBJECT ITEM:	COM0000000	26. EOU	1124						ing average	
					-				rolling aver	age
EMISSION UNIT(S):	Hydrogen Pl	ant Heate	rs							
	38-B-1, 38-	B-2			EMISSIO	N BASIS:		SIP for SO2	NAAQS	_
ASSOCIATED ITEMS:	TREA16, TRE	A11, , EC	UI24, EQUI:	163, EQUI	208, EQUI	205, EQ	UI162, STE	U87	-	
					ODERATI	NG HOLE	RS OF EMISS	TIMILIANIS		
					OPERAII	NG ROU	KS OF EIVIIS	Total	NSP Gas	PSA Gas
								2160	2160	2160
A. EMISSION DATA SUMMAR	RY				B. CEM P	erforma	nce Summar	у		
DURATION OF EXCE	ESS EMISSIONS	(HRS)			10	URATIO	N OF CEM DO	DWNTIME DU	RING	
1			lb/mmbtu	lb/hr	s	OURCE	OPERATION	(HRS)		
a) Startup/Shutdown			0.00	0.00	-				Nat Gas	PSA Gas
b) Control equipment			0.00	0.00	۰ -	•	malfunction		0.00	0.00
c) Process problems	20		0.00	0.00	_	•	onitor malfunct	lion	0.00	0.00
d) Other known causee) Unknown causes	:5		0.00	0.00) QA calib) Other k	nown causes		0.00	0.00
f) Soot blowing			0.00	0.00		,	n causes		0.00	0.00
g) Fuel problems			0.00	0.00	7	,				0.00
2 TOTAL DURATION (F	HRS)		0.00	0.00	− 2 ⊤	OTAL DI	JRATION (HR	S)	0.00	0.00
3 PERCENT OF TOTAL	•			***************************************	3 PERCENT OF TOTAL					
EXCESS EMISSIONS	S		0.00%	0.00%		EM DOV	VNTIME		0.00%	0.00%
	FOR OPACITY	, RECORD	ALL TIMES IN	MINUTES.	FOR GASE	S, RECO	RD ALL TIME	S IN HOURS.		
% Total Excess Emissions =		Total Duratio	n of Excess Er	nissions / (T	otal Operatir	ng Time -	CEM Downtin	ne)		
% Total CEM Downtime =		CEM Downti	me / Total Ope	rating Time						
NOTES:										
<u></u>	· · · · · · · · · · · · · · · · · · ·									
If no exceedances: certify tha		•								xceedances
during the reporting period. I d	-			•		ie nest ol			OII IS VAIIU.	
SUBMITTED BY:	See certifi	cation pa	ge at iron	or repo	T.C			DATE:		

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)		
EMISSION UNIT(S):		38-B-1, 38-B-2				
POLLUTANT MONITORED:		SO2 lb/mmbtu				
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION			
DATEMBLE	(1110)	CONCENTION	O/OOL/OO!((EO!(VE /O!(O!)			
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	No excess emissions.				
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.				
Total	0.00					
c) Process problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.				
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.				
e) Unknown causes 1/1/2017 4/1/2017 Totai	0.00	_No excess emissions.				
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	No excess emissions.				
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.				

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		38-B-1, 38-B-2		
POLLUTANT MONITORED:		SO2 lb/hr		
	TOTAL			
	DURATION			
DATE/TIME	(HRS)	CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	•		
a) I lake aum anung				
e) Unknown causes 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
6 Coot blaving				
f) Soot blowing 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_		
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		38-B-1, 38-B-2	
POLLUTANT MONITORED:		Nat Gas Flow Rate	<u> </u>
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AI ID 447)	
EMISSION UNIT(S):		38-B-1, 38-B-2		
POLLUTANT MONITORED:		PSA Gas Flow Rate		
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION		
a) Monitor malfunction				
Total	0.00	-		
b) Non-monitor malfunction				
Total	0.00	-		
c) QA calibration				
Total	0.00	-		
d) Other known causes				
Total	0.00	-		
e) Unknown causes				
Total	0.00	-		

AQD FILE #: #0203 (AI ID 447)

Other:
MONITOR MODEL: Polytron IR Ex HC MFR: Drager, Inc. FACILITY: St. Paul Park Refining Co. LLC EMISSION LIMIT AND AVERAGE TIME: 10 mg TOC/liter of gasoline loaded (6 hour avg) 0.74% - CEM limit established by stack test as surrogate for 10 mg/L EMISSION UNIT(S): Light oil loadrack Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A EMISSION DATA SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems 0.00 d) Other known causes 0.00 c) QA calibration c) Polytron IR Ex HC MFR: Drager, Inc. EMISSION LIMIT AND AVERAGE TIME: 10 mg TOC/liter of gasoline loaded (6 hour avg) 0.74% - CEM limit established by stack test as surrogate for 10 mg/L EMISSION BASIS: 40 CFR 63.422(b) NESHAP Subpart CC TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
MODEL Polytron IR Ex HC MFR: Drager, Inc.
Park Refining Co. LLC ### EMISSION LIMIT AND AVERAGE TIME: 10 mg TOC/liter of gasoline loaded (6 hour avg)
St. Paul Park Refining Co. LLC EMISSION LIMIT AND AVERAGE TIME: 10 mg TOC/liter of gasoline loaded (6 hour avg) 0.74% - CEM limit established by stack test as surrogate for 10 mg/L EMISSION UNIT(S): Light oil loadrack Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems c) Process problems d) Other known causes 0.00 c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) Process problems c) QA calibration c) QA calibration c) QA calibration c) QA calibration c) QA calib
In mg TOC/liter of gasoline loaded (6 hour avg) 0.74% - CEM limit established by stack test as surrogate for 10 mg/L EMISSION SUBJECT ITEM: EQUIO000000028 EMISSION UNIT(S): Light oil loadrack 40 CFR 63.422(b) NESHAP Subpart CC Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown 0.00 b) Control equipment 0.00 c) Process problems 0.00 d) Other known causes 0.00 c) QA calibration 1.00
EMISSION SUBJECT ITEM: EQUIO00000028 EMISSION UNIT(S): Light oil loadrack Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT:
ASSOCIATED ITEM: EQUIO000000028
EMISSION SUBJECT ITEM: EQUIDO00000028 EMISSION UNIT(S): Light oil loadrack 40 CFR 63.422(b) NESHAP Subpart CC Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown 0.00 SOURCE OPERATION (HRS) b) Control equipment 0.00 SOURCE OPERATION (HRS) c) Process problems 0.00 b) Non-monitor malfunction 0.00 C) Process problems 0.00 C) QA calibration 1.00
EMISSION UNIT(S): Light oil loadrack Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes EMISSION BASIS: 40 CFR 63.422(b) NESHAP Subpart CC TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
EMISSION UNIT(S): Light oil loadrack Vapor Recovery Unit ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems c) Process problems d) Other known causes 20 CFR 63,422(b) NESHAP Subpart CC NOTAL Subpart CC NESHAP Subpart CC NOTAL Subpart CC NO
ASSOCIATED ITEMS: TREA18, TREA25, EQUI168, STRU31, STRU016 TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction b) Non-monitor malfunction c) QA calibration 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction c) O O O O O O O O O O O O O O O O O O O
TOTAL OPERATING HOURS OF EMISSION UNIT: 1 DURATION OF EXCESS EMISSIONS (HRS) 2 Startup/Shutdown 2 O Control equipment 2 O Control equipment 3 O Control equipment 4 O Control equipment 5 O Control equipment 6 O Control equipment 7 O Control equipment 7 O Control equipment 7 O Control equipment 8 O Control equipment 9 O Control e
TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems 0.00 d) Other known causes TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems 0.00 d) Other known causes TOTAL OPERATING HOURS OF EMISSION UNIT: 2160 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes OF EMISSION UNIT: 2160 B. CEM PERFORMANCE SUMMARY 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes OF EMISSION UNIT: 2160 B. CEM PERFORMANCE SUMMARY 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
A. EMISSION DATA SUMMARY B. CEM PERFORMANCE SUMMARY 1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes B. CEM PERFORMANCE SUMMARY 1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
1 DURATION OF EXCESS EMISSIONS (HRS) 1 DURATION OF CEM DOWNTIME DURING a) Startup/Shutdown 0.00 SOURCE OPERATION (HRS) b) Control equipment 0.00 a) Monitor malfunction 0.00 c) Process problems 0.00 b) Non-monitor malfunction 0.00 d) Other known causes 0.00 c) QA calibration 1.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes 0.00 SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known causes 0.00 SOURCE OPERATION (HRS) a) Monitor malfunction 0.00 b) Non-monitor malfunction 0.00 c) QA calibration 1.00
b) Control equipment 0.00 a) Monitor malfunction 0.00 c) Process problems 0.00 b) Non-monitor malfunction 0.00 d) Other known causes 0.00 c) QA calibration 1.00
c) Process problems 0.00 b) Non-monitor malfunction 0.00 d) Other known causes 0.00 c) QA calibration 1.00
d) Other known causes 0.00 c) QA calibration 1.00
a) Unknown causes
e) Unknown causes 0.00 d) Other known causes 6.00
f) Soot blowing 0.00 e) Unknown causes 0.00
g) Fuel problems0.00_
2 TOTAL DURATION (HRS) 0.00 2 TOTAL DURATION (HRS) 7.00
3 PERCENT OF TOTAL 3 PERCENT OF TOTAL
EXCESS EMISSIONS 0.00% CEM DOWNTIME 0.32%
FOR OPACITY, RECORD ALL TIMES IN MINUTES. FOR GASES, RECORD ALL TIMES IN HOURS.
% Total Excess Emissions = Total Duration of Excess Emissions / (Total Operating Time - CEM Downtime)
6 Total CEM Downtime = CEM Downtime / Total Operating Time
NOTES:
f no exceedances: I certify that the required analyses were made, that I am familiar with the results, and that to the best of my knowledge there were no
exceedances during the reporting period. I certify that I am familiar with the information in this report and that to the best of my knowledge the information is valid.
SUBMITTED BY: See certification page at front of report DATE:

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)						
EMISSION UNIT(S):		Light oil loadrack VRU							
POLLUTANT MONITORED:		TOC	TOC						
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION						
a) Startup/Shutdown 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.							
b) Control equipment 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.							
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	_ No excess emissions.							
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.							
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.							
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.							
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.							

REPORTING QUARTER:		First, 2017	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		Light oil loadrack VRU	
POLLUTANT MONITORED:		TOC	
DATE/TIME	TOTAL	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
_			
Total	0.00		
b) Non-monitor malfunction			
Total	0.00		
c) QA calibration			
1/17/2017 14:00			
1/17/2017 15:00 _	1.00	Quarterly calibration gas audit.	
Total	1.00		
d) Other known causes			
3/28/2017 8:00			
3/28/2017 14:00	6.00	Analyzer replaced.	
	6.00		
e) Unknown causes			
_ Total	0.00	_	
i ottai	5.00		

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	CO	CO2	02	TRS	H2S	HCL	Opacity	
	Other:	Temperature	>							
					MONITO					
REPORTING QUARTER:	First, 2017	· · · · · · · · · · · · · · · · · · ·		-	MODEL:		Thermoco	uple		
FACILITY:	•				MFR:	NA				
St. Paul Park R	efining Co.	LLC								
ENTROPONION OF ITEM					EMISSIC		ID AVERAGE			
EMISSION SUBJECT ITEM:	COM0000000	· · · · · · · · · · · · · · · · · · ·				> 215°F -	- 3 hour r	olling av	rerage	
	Unit Startı	ip - 6/6/08			EMISSIC	ON BASIS:	Title V	Permit		
EMISSION UNIT(S):	Light oil l	.oadrack				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	11010	20211120		
	Permanent V	apor Combu	stor Unit	(PVC	U)	-				
ASSOCIATED ITEMS:	TREA26, EQU	JI28, EQUI4	1, STRU32	2		•				
					TOTAL (OPERATING	HOURS			
						SSION UNIT		1416		
							-			
A. EMISSION DATA SUMMA	RY				B. CEM	PERFORMA	NCE SUMMA	ARY		
4 DUDATION OF EVO	ESS EMISSION	C (UDC)			l ,	DUBATION	OF CEM DO	NAME T	N IDINO	
1 DURATION OF EXC a) Startup/Shutdown	ESS EMISSION	o (nko)	0.00		'		OPERATION		JURING	
b) Control equipment			0.00	•	a) Monitor malfunction 0.00					İ
c) Process problems			0.00		b) Non-monitor malfunction 0.00				İ	
d) Other known cause	es		0.00		c) QA calibration 0.00					
e) Unknown causes			0.00		d) Other known causes 0.00					
f) Soot blowing			0.00		ŀ	e) Unknowr	n causes		0.00	
g) Fuel problems			0.00							
2 TOTAL DURATION (•		0.00				RATION (HR	S)	0.00	
3 PERCENT OF TOTA EXCESS EMISSION			0.00%		3	PERCENT CEM DOW			0.008	
EVCE22 EMISSION	15		0.00%		Ì	CEM DOW	IN I HVIE		0.00%	
	FOR OPACITY	, RECORD AI	L TIMES IN	MINU.	TES. FOR	R GASES, R	ECORD ALL	TIMES IN H	HOURS.	
									<u></u>	
% Total Excess Emissions =		Total Duration			·	Operating Ti	me - CEM Do	wntime)		
% Total CEM Downtime =		CEM Downtim	e / Total Op	erating	Time					
NOTES:			· · · · · · · · · · · · · · · · · · ·							
								····		
If no exceedances: I certify that exceedances during the reportion is valid.										
SUBMITTED BY:	See certifi	cation pag	e at from	nt of	report			DATE:		

REPORTING QUARTER:		First, 2017	AC	AQD FILE # #0203 (AI ID 447)				
EMISSION UNIT(S):		Light oil loadrack Process Vapor Burner (F						
POLLUTANT MONITORED:		Temperature	Temperature					
	TOTAL DURATION							
DATE/TIME	(HRS)	MIN.TEMPERATURE	CAUSE/CORRECTIVE ACTION					
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.						
Total	0.00	-						
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.						
Total -	0.00	-						
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.						
d) Other known causes	0.00							
4/1/2017		No excess emissions.						
Total	0.00	-						
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.						
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.						
Total	0.00	-						
g) Fuel problems 1/1/2017 4/1/2017 _		_No excess emissions.						
Total	0.00							

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Light oil loadrack - PVB	
POLLUTANT MONITORED:		Temperature	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

POLLUTANT (circle one):	(so ₂)	(NOx)	co c	002 02	TRS	H2S	HCL	Opacity Othe	ır			
Other:	This repo	ort addre	sses Fla	are SARA re	portable	e emissions	, pilot	monitoring, pi	lot flam	e outage	es, and SO2 monitoring	
REPORTING QUARTER:	First, 20	017		MONITO		Dual Range						
FACILITY:						Scientific						
St. Paul Park Refin	ing Co. LL	.c										
EMISSION SUBJECT ITEM:	TREA13			EMISSI	ON LIMIT A	AND AVERAGE	E TIME:					
EMISSION UNIT(S):				EMISSI	ON BASIS:							
TREA13 Refinery fla	re stack				40 CFR	63 NESHAP S	ubpart	CC, Subpart Ja				
ASSOCIATED ITEMS:	FUGI73	-			7	TOTAL OPERA	ATING HO	DURS				
					(OF EMISSION	UNIT:				2160	
A. EMISSION DATA SUMMA			CEMBI	EDEODMANO	CUMMAG	av (Caannar)	C CEM	PERFORMANCE SI	IMMARY		1	
1 DURATION OF SARA RE				JRATION OF C				DURATION OF CE		IME	DURATION OF PILOT DOW	NITIME
EMISSIONS (HRS)	SO2	NOx		JRING SOURC				DURING SOURCE			DURING SOURCE OPERAT	
a) Startup/Shutdown	0.00	0.00	a)	Monitor malfun	ction	0.00_		a) Monitor malfunct	tion	0.00	a) Pilot malfunction	0.00
b) Control equipment	0.00	0.00	b)	Non-monitor m	alfunction_	0.00]	b) Non-monitor mal	Ifunction	0.00	b) Other known causes	0.00
c) Process problems	0.00	0.00	c) (QA calibration	_	0.00]	c) QA calibration		2.00	c) Unknown causes	0.00
d) Other known causes	0.00	0.00	d) •	Other known c	auses _	1.67		d) Other known cau	uses	38.00]	
e) Unknown causes	0.00	0.00	e)	Unknown caus	es _	0.00_	1	e) Unknown causes	s	0.00	TOTAL DURATION (HRS)	0.00
f) Soot blowing	0.00	0.00					!				PERCENT OF TOTAL	
g) Fuel problems	0.00	0.00		TAL DURATIO	` '-	1.67	1	TOTAL DURATION	, ,	40.00	PILOT DOWNTIME	0.00%
2 TOTAL DURATION (HRS) 3 PERCENT OF TOTAL	0.00	0.00		RCENT OF TO		0.000	3	PERCENT OF TOT CEM DOWNTIME	TAL			
EXCESS EMISSIONS	0.00%	0.00%	CE	IN DOWN HAIR	-	0.08%	1	CEIVI DOVVIATIIVIE		1.85%		
EXCESS EMISSIONS			PD ALL TI	MES IN MINIT	TES EOR	CASES REC	OPDALL	TIMES IN HOURS.				
N Total Common Control	TONOLAG											
% Total Excess Emissions =						s / (Total Oper	ating i im	e - CEM Downtime)				
% Total CEM Downtime =		CEM Down	ntime / To	tal Operating T	ime							
NOTES:												
 												
If no exceedances: I certify	that the requ	ired analyse	s were m	ade that lam	familiar wit	h the results a	and that to	the best of my kno	wledge the	re were no	exceedances during the repo	orting period I certify
a no excoordiness. Toerthy	are requ							best of my knowled				nung penou. reattily
SUBMITTED BY:	See certi	fication	page at	t front of	report						DATE:	

SARA Reportable Emissions Report - SO2 (i.e., > 500 lbs)

REPORTING QUARTER:		First, 2017		AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):	1	TREA13 Refinery fl	are stack	
POLLUTANT MONITORED:	٤	502	_	
DATE/TIME	TOTAL DURATION (HRS)	APPROX. SO2 EMITTED (LBS)	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017 Total				
b) Control equipment 1/1/2017				
4/1/2017 Total	0.00			
c) Process problems 1/1/2017 4/1/2017				
Total d) Other known causes	0.00			
1/1/2017 4/1/2017 Total				
e) Unknown causes 1/1/2017				
4/1/2017 Total	0.00			
f) Soot blowing 1/1/2017 4/1/2017 Total				
g) Fuel problems 1/1/2017 4/1/2017				

SARA Reportable Emissions Report - NO2 (i.e., > 1000 lbs)

REPORTING QUARTER:		First, 2017	_		AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		TREA13 Refinery f	lare stack	_	
POLLUTANT MONITORED		NA			
DATE/TIME	TOTAL DURATION (HRS)	APPROX. NO2 EMITTED (LBS)	CAUSE/CORRECTIVE ACTION		
a) Startup/Shutdown 1/1/201	7				
4/1/201 Total					
b) Control equipment 1/1/201 4/1/201 Total		-			
c) Process problems 1/1/201 4/1/201 Total		-			
d) Other known causes 1/1/201 4/1/201 Total		-			
e) Unknown causes 1/1/201 4/1/201 Total	7	-	•		
f) Soot blowing 1/1/201 4/1/201 Total		-			
g) Fuel problems 1/1/201 4/1/201	7	-			

REPORTING QUARTER:		First, 2017	AQD FILE# #0203 (AI ID 447)
EMISSION UNIT(S):		TREA13 Refinery flare stack	
POLLUTANT MONITORED:		502	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00		
b) Non-monitor malfunction			
Total	0.00		
c) QA calibration 2/6/2017 13:00 2/6/2017 15:00	2.00	Quarterly calibration gas audit.	
Total .	2.00		
	200		
d) Other known causes 1/5/2017 11:00 1/5/2017 13:00 2/1/17 13:00	2.00	Low air pressure which actuates valves and resulted in an analyzer fault.	
2/1/17 14:00 2/23/2017 6:00	1.00	Preventive maintenance completed to replace rotors.	
2/24/2017 17:00	35.00	Failed calibration due to plugging. Maintenance completed on analyzer w/ calibration/validation.	

Total 38.00
e) Unknown causes

Total 0.00

FLARE SCANNER DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #:	#0203 (AI ID 447)
EMISSION UNIT(S):		TREA13 Refinery flare stack		
POLLUTANT MONITORED:		Flame Presence (Non-Pollutant)		
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION		
a) Monitor malfunction				
Total -	0.00			
b) Non-monitor malfunction				
Total	0.00			
c) QA calibration				
Total	0.00			
d) Other known causes 1/6/2017 4:04 1/6/2017 4:08 2/21/2017 6:55 2/21/2017 8:31	0.07 1.60	IR camera data acquisition error but at least one thermocouple greater than 1000 degrees indicates flame IR camera data acquisition error but at least one thermocouple greater than 1000 degrees indicates flame		
Total e) Unknown causes	1.67			

0.00

Total

FLARE PILOT DOWNTIME REPORT

REPORTING QUARTER:	First, 2017	AQD FILE #: #0203 (AI				
EMISSION UNIT(S):	TREAC000000013					
POLLUTANT MONITORED:	Flame Presence (Non-Pollutant)					
TOTAL DURATION DATE/TIME (HRS)	I CAUSE/CORRECTIVE ACTION					
a) Pilot malfunction	CAUSEOUNICETIVE ACTION					
1/1/2017 4/1/2017						
Total 0.00	_					
b) Other known causes 1/1/2017 4/1/2017						
Total 0.00	_					
c) Unknown causes						
1/1/2017 4/1/2017						
Total 0,00	=					

AQD FILE#: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx Temp	со	CO2	02	TRS	H2S HC	CL	Opacity	
REPORTING QUARTER:	First, 201	,			MONITO		002A GC			
NEI ORTHO GOARTER.	11150/ 201				WOBLE	-	002A GC			
FACILITY:	63-3 0- 1	T G			MFR:		ABB			
St. Paul Park Re	rining co. i	iliC			EMISSI	ON LIMIT	ΓAND AVERAGE T	IME:		
							m H2S - 365 da		ling aver	rage
EMISSION SUBJECT ITEM:	TREA5						DEGF - 3 hour			
EMISSION UNIT(S):	W.W.T.P. Th	nermal Oxid	lizer							
	(SBC Vent C	as / TO Te	mperature)	EMISSI	ON BASI	S:			
						40 CFR				
ASSOCIATED ITEMS:	EQUI209, ST	RU22, SV06	55			MN Rule	7007.0800, Subp.	2		
					TOTAL	ODEDAT	ING HOURS			
						SSION U		65		
					0	00,0,10				
A. EMISSION DATA SUMMAR	₹Y				B. CEM	PERFOR	RMANCE SUMMAR	RY		
1 DURATION OF EXCE	SS EMISSIONS	(HRS)								
) o			H2S	Temperature	1		ON OF CEM DOW			
a) Startup/Shutdown		-	0.00	0.00	4		E OPERATION (HR or malfunction	(8)	H2S	Temperature
b) Control equipment c) Process problems		-	0.00	0.00	-	•	nonitor malfunction	_	0.00	0.00
d) Other known cause	ıs.	-	0.00	0.00	1	c) QA ca			0.00	0.00
e) Unknown causes		-	0.00	0.00	1	•	known causes	_	0.00	0.00
f) Soot blowing		-	0.00	0.00	1	,	own causes		0.00	0.00
g) Fuel problems		_	0.00	0.00]			_		
2 TOTAL DURATION (H	IRS)	_	0.00	0.00	2	TOTAL (DURATION (HRS)		0.00	0.00
3 PERCENT OF TOTAL	-				3	PERCE	NT OF TOTAL			
EXCESS EMISSIONS	6	_	0.00%	800.0	-	CEM DO	OWNTIME	_	0.00%	0.00%
	FOR OPACITY	, RECORD A	LL TIMES IN	MINUTES. FOR	R GASES	RECOF	RD ALL TIMES IN H	IOURS.		
% Total Excess Emissions =		Total Duration	of Excess E	missions / (Total	Operatin	g Time - (CEM Downtime)			
% Total CEM Downtime =		CEM Downtin	ne / Total Ope	erating Time						
NOTES: SPPRC's SBC's we	re converted	to an act	ivated slu	udge aerator	system	in Jun	ne 2014.			
SBC's are no lon	ger in-use.									
If no exceedances: I certify that during the reporting period. I ce					e results,	and that	to the best of my kn	nowledge	there were	no exceedances
SUBMITTED BY:	See certifi	cation pag	ge at from	t of report		<u>-</u>	DATE	: _		

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		W.W.T.P. Thermal Or	xidizer	
POLLUTANT MONITORED:		H2S		
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (150 ppm, 365 day average)	, CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017 _		No excess emissions.		
Total	0.00			
b) Control equipment 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		W.W.T.P. Thermal O	xidizer	
POLLUTANT MONITORED:		Temperature	· 	
DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
b) Control equipment 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emíssions.		
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.		

REPORTING QUARTER:		First, 2017	AQD FILE#: #0203 (AT ID 447)
EMISSION UNIT(S):		W.W.T.P. Thermal Oxidizer	
POLLUTANT MONITORED:		н25	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00		

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		W.W.T.P. Thermal Oxidizer	_
POLLUTANT MONITORED:		Temperature	_
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00		
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	CO C	02 02	TRS	H2S	HCL	Opacity	
	Other:	Temp							
	-			MONIT	OR				
REPORTING QUARTER:	First, 2017			MODE	L <u>:</u>	Thermoco	ouple		
FACILITY:				MFR:					
St. Paul Park Ref:	ining Co. LLC			IVII I C.					
be. Iddi Idik ker	Initing CO. LLIC								
	·			EMISS	ION LIMIT	AND AVER	AGE TIME:		
EMISSION SUBJECT ITEM:	COMG13				> 1400	DEGF - 3	hour rol	ling averag	je
EMISSION UNIT(S):	W.W.T.P. The	armal Ovid	izer	FMISS	ION BASIS	≥ .			
EMISSION OWN (S).	(N, Vent Gas		perature)	LIVIIOO		61.349(a) (2)		
	(112 10110 001	, , 10 10	, , , , , , , , , , , , , , , , , , , ,				, (2) 30, Sub.E		
ASSOCIATED ITEMS:	TREA5, EQUI:	209, STRU2	2, SV065		PAN ROLL	5 7011.JJ	307 500.13		
				TOTAL	ODEDAT	ING HOUR			
					ISSION UI	ING HOURS			
				OF EM	IISSION UI	MII:	2065	-	
A. EMISSION DATA SUMMA	RY			B. CEN	M PERFOR	MANCE SU	JMMARY		
1 DURATION OF EXCES	S EMISSIONS (H	RS)							
			Temperature		1 DURATI	ON OF CEN	I DOWNTIM	IE DURING	
a) Startup/Shutdown			0.00		SOURCE	E OPERATION	ON (HRS)		Temperature
b) Control equipment			0.00		a) Monito	or malfunctio	on		0.00
c) Process problems			0.00		b) Non-m	nonitor malfu	ınction		0.00
d) Other known causes			0.00		c) QA ca	libration			0.00
e) Unknown causes			0.00		d) Other	known caus	es		0.00
f) Soot blowing			0.00		e) Unkno	own causes			0.00
g) Fuel problems			0.00						
2 TOTAL DURATION (HF	RS)		0.00		2 TOTAL [DURATION	(HRS)		0.00
3 PERCENT OF TOTAL				;	3 PERCEN	NT OF TOTA	AL.		
EXCESS EMISSIONS		-	0.00%		CEM DO	WNTIME			0.00%
	FOR OPACITY	RECORD A	LL TIMES IN MINUTE	ES. FOR G	ASES, RE	CORD ALL	TIMES IN H	OURS.	,
% Total Excess Emissions =	7	Total Duration	of Excess Emissions	s / (Total Op	perating Tir	ne - CEM D	owntime)		
% Total CEM Downtime =	(CEM Downtim	ne / Total Operating T	ïme					
NOTES:									
	<u></u>								
								··	
						-			
If no exceedances: I certify that exceedances during the report						that to the b	est of my kn	owledge there	were no
- ,		-					5.475		
SUBMITTED BY:	see certific	Jacton pag	e at front of re	=hor r			DATE:		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		W.W.T.P. Thermal Oxidizer	-
POLLUTANT MONITORED:		Temperature	<u>-</u>
DATE/TIME	TOTAL DURATION (HRS)	MIN. TEMP. (°F, 3-hr average) CAUS	F/CORRECTIVE ACTION
	(DOGNIESTIVE / IGNION
a) Startup/Shutdown 1/1/2017 4/1/2017	0.00	_No excess emissions.	
Total	0.00		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
c) Process problems 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
rotai	0.00		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	
e) Unknown causes			
1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.	
Total	0.00	-	

REPORTING QUARTER:		First, 2017	AQDFILE# #0203 (AI ID 447)
EMISSION UNIT(S):		W.W.T.P. Thermal Oxidizer	
POLLUTANT MONITORED:		Temperature	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	_	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	_	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one): SO2 NOx CO CO2	O2 TRS H2S HCL	Opacity		
Other: S02 also a surrogate for	MACT Subpart UUU HAP Emissi	ons		
	MONITOR			
REPORTING QUARTER: First, 2017	MODEL:	Advance Optima	, Limas 11, NDUV	
FACILITY:	MFR:	ABB		
St. Paul Park Refining Co. LLC	_			
	EMISSION L	IMIT AND AVERAGE		
EMISSION SUBJECT ITEM: EQUI33		250 ppmd, 02 fr	ree - 12 hour rolling average	
EMISSION UNIT(S):	EMISSION E	BASIS:		
#3 SRU/SCOT unit		40 CFR 60 NSPS	Subpart J	
Unit Startup - 11/16/2004, CEM Startup 11/1	6/04		Table 29 Opt la MACT Subpart U	טנ
ASSOCIATED ITEMS: TREA4, COMG7, EQUI163, EQUI296, EQU	JI210, EQUI211, STRU6			
PROCESS UNIT DESCRIPTIO EU0083 is a 4-Stage Claus Sulfur Re	ecovery Unit with a tail Gag	Treating Unit		
The train includes the SRU incinera			s 50 LTPD	
			 	
	TOTAL OPERATING HOURS	3		
	OF EMISSION UNIT:	2160		
A. EMISSION DATA SUMMARY	B. CEM PERFORMANCE SUMMARY	·	C. SRU BYPASS INFORMATION	
4 DUBATION OF EVOCOS EMISSIONS (UBS)	1 DURATION OF CEM DOWN	FINE DUDING	1 DURATION OF BYPASS	
1 DURATION OF EXCESS EMISSIONS (HRS) a) Startup/Shutdown 0.00	SOURCE OPERATION (HRS		a) Process Problems	0.00
b) Control equipment 0.00	a) Monitor malfunction	0.00	b) Other known causes	0.00
c) Process problems 0.00	b) Non-monitor malfunction	0.00	c) Unknown causes	0.00
d) Other known causes0.00	c) QA calibration	1.00	o, omaiowi oddoos	
e) Unknown causes 0.00	d) Other known causes	9.00	2 TOTAL DURATION (HRS)	0.00
f) Soot blowing0.00	e) Unknown causes	0.00	3 PERCENT OF TOTAL	0.00
g) Fuel problems 0.00	o, cimienii adasee		OPERATION HOURS	0.00%
2 TOTAL DURATION (HRS) 0.00	2 TOTAL DURATION (HRS)	10.00	_	
3 PERCENT OF TOTAL	3 PERCENT OF TOTAL			
EXCESS EMISSIONS0,00%	CEM DOWNTIME	0.46%		
FOR OPACITY, RECORD ALL TIMES IN MINUT	TES. FOR GASES, RECORD ALL TIME	ES IN HOURS.		
% Total Excess Emissions = Total Duration of Excess Emissio	ns / (Total Operating Time - CEM Dowr	ntime)		
% Total CEM Downtime = CEM Downtime / Total Operating				
NOTES: Actual monitored values are noted in this section.				
During excess emission events, a value equal to 1.5 times the high cali	bration das concentration is used to ren	lace any analyzer read	lings over that value since measured data on	ints are not
verifiable or accurate when at least 50% greater than the high calibration		ado dily dilalyzor rodd	migo over that value ships incasares data po	into die not
If no exceedances: I certify that the required analyses were made, that I am fam there were no exceedances during the reporting period. I certify that I am familia knowledge the information is valid.				
SUBMITTED BY: See certification page at front of	report	DATE:	_	

REPORTING QUARTER:		First, 2017	AQDFILE# #0203 (AI ID 447)
EMISSION UNIT(S):		#3 SRU/SCOT unit	
POLLUTANT MONITORED:		SO2 (ppm)	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONC. (ppm, 12-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown 1/1/2017 4/1/2017		Actual Recalc No excess emissions.	
Total b) Control equipment	0.00	_ 140 CXCB33 CMISSIONS.	
1/1/2017 4/1/2017 Total	0.00	_ No excess emissions.	
c) Process problems 1/1/2017 4/1/2017			
Total	0.00	No excess emissions.	
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.	
g) Fuel problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.	

REPORTING QUARTER:		First, 2017 AQD FILE# #0203 (AI ID 447)
EMISSION UNIT(S):		#3 SRU/SCOT unit
POLLUTANT MONITORED:		<u>\$02</u>
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION
a) Monitor malfunction		
Total	0.00	_
b) Non-monitor malfunction		
Total -	0.00	-
c) QA calibration 1/10/17 13:00 1/10/17 14:00 Total	1.00	Quarterly calibration gas audit.
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue. Missing data.
Total	9.00	-
e) Unknown causes		
Total	0.00	-

CONTINUOUS EMISSION MONITOR SRU Bypass Information

REPORTING QUART	TER:		First, 2017 AQD FILE	* #0203 (AI ID 447)
EMISSION UNIT(S):			#3 SRU/SCOT unit	
POLLUTANT MONIT	ORED:		Bypass (Acid gas)	
DATE/TIME		TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Process problems		(11110)	ON OCCUPANT NOTION	
Total	1/1/2017 4/1/2017	0.00	No bypasses that resulted in excess emissions.	
b) Other known cause	es 1/1/2017			
Total	4/1/2017	0.00	No bypasses that resulted in excess emissions.	
b) Unknown causes	1/1/2017			
Total	4/1/2017	0.00	No bypasses that resulted in excess emissions.	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx	co	CO2 O2) TRS	H2S	HCL	Opacity			
REPORTING QUARTER:	First, 2017	7		MONITO MODEL:		Optima,	Limas 11,	NDUV			
FACILITY: St. Paul Park R	efining Co.	LLC		MFR:	ABB						
EMISSION LIMIT AND AVERAGE TIME:											
EMISSION SUBJECT ITEM:	EQ0133		•								
EMISSION UNIT(S):	#3 SRU/SCOT	unit		_	15.0 16	SU2/NT -	3 hour r	olling avera	ge		
	Unit Startu	ip - 11/16,	/2004	EMISSIO	N BASIS:	MN Rule	7009.0020	- AAQS/SIP			
ASSOCIATED ITEMS:	TREA4, COMO	37, EQUI163	3, EQUI2		EQUI211	-					
					PERATING SION UNIT		2160	-			
A. EMISSION DATA SUMMA	RY			B. CEM	PERFORMA	NCE SUM	MARY				
		1 hr	3-hr								
1 DURATION OF EXC	ESS EMISSION	NS (HRS)			1 DURATIO	N OF CEM	DOWNTIME	DURING			
a) Startup/Shutdown		0.00	0.00	_	SOURCE OPERATION (HRS)						
b) Control equipmen	t	0.00	0.00	_	a) Monitor	malfunction	1	0.00			
c) Process problems		0.00	0.00	_	b) Non-mo	onitor malfui	nction	0.00			
d) Other known caus	ses	0.00	0.00	_	c) QA cali	bration		1.00			
e) Unknown causes		0.00	0.00	_	d) Other ƙ	nown cause	es	9.00			
f) Soot blowing		0.00	0.00	_	e) Unknov	vn causes		0.00			
g) Fuel problems		0.00	0.00	_							
2 TOTAL DURATION	•	0.00	0.00			URATION (I					
3 PERCENT OF TOTA				;		T OF TOTAL	L.				
EXCESS EMISSION	S	0.00%	0.00%	-	CEM DOV	VNTIME		0.46%			
	FOR OPACITY	, RECORD A	ALL TIMES	S IN MINUTES.	FOR GASE	S, RECORI	D ALL TIME	S IN HOURS.			
% Total Excess Emissions =		Total Duratio	n of Exces	ss Emissions / (Fotal Opera	ting Time - (CEM Downti	me)			
% Total CEM Downtime =		CEM Downtii	me / Total	Operating Time							
NOTE:				· · · · · · · · · · · · · · · · · · ·							
#3 SRU/SCOT 1b	SO2/hr CEM d	lowntime is	the sa	me as report	ed for	#3 SRU/SC	OT SO2 p	pm.			
If no exceedances: I certify the during the reporting period. I of SUBMITTED BY:	certify that I am	familiar with t	he informa		rt and that t	o the best o				inces	

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		#3 SRU/SCOT unit		-
POLLUTANT MONITORED:		S02 (1bs/hr) - 45	<u>lb/</u> hr, l-hr average	
	TOTAL			
	DURATION	MAX. CONCEN.		
DATE/TIME_	(HRS)	(lbs/hr, 1-hr average)	CAUSE/CORRECTIVE AC	CTION
a) Startup/Shutdown				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_		
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
a) Halmann agusas				
e) Unknown causes 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	•		
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_		

REPORTING QUARTER:		First, 2017	<u> </u>	AQD FILE # #0203 (AI ID 447)
EMISSION UNIT(S):		#3 SRU/SCOT unit	····	
POLLUTANT MONITORED:		SO2 (ibs/hr) - 15	lb/hr, 3-hr average	
	TOTAL			
DATE/TIME _	DURATION (HRS)	MAX. CONCEN. (lbs/hr, 3-hr average)	_CAUSE/CORRECTIVE AC	CTION
a) Startup/Shutdown				
1/1/2017				
4/1/2017 _ Total	0.00	_No excess emissions.		
rotai	0.00			
b) Control equipment				
1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_		
c) Process problems				
1/1/2017				
4/1/2017_		No excess emissions.		
Total	0.00			
d) Other known causes				
1/1/2017		Na access contratas		
4/1/ 2017 _ Total	0.00	No excess emissions.		
10101	0.00			
e) Unknown causes				
1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			
f) Soot blowing				
1/1/2017				
4/1/2017 _		No excess emissions.		
Total	0.00			
g) Fuel problems				
1/1/2017				
4/1/2017 _ Total	0.00	No excess emissions.		
) Oldi	0.00			

REPORTING QUARTER:		First, 2017 AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		#3 SRU/SCOT unit
POLLUTANT MONITORED:		S02 (lbs/hr)
DUF	OTAL RATION HRS)	CAUSE/CORRECTIVE ACTION
		CAUSE/CORRECTIVE ACTION
	OTE:	downtime same as reported for #3 SRU/SCOT SO2 ppm
	, \	as a reported to 1 and 101 and
a) Monitor malfunction		
Total	0.00	See #3 SCOT ppm page for details
b) Non-monitor malfunction		
Total	0.00	See #3 SCOT ppm page for details
c) QA calibration		
Total	1.00	See #3 SCOT ppm page for details
d) Other known causes		
Total	9.00	See #3 SCOT ppm page for details
e) Unknown causes		
Total	0.00	See #3 SCOT ppm page for details

AQD FILE #: #0203 (AI ID 447)

POLLUT	ANT (circle one):	SO2	NOx	CO	CO2	O2	TRS	H2S	HCL	Opacity
		Other: (Temperature	•						
		`		/	•	MONITOR				
REPOR	TING QUARTER:	First, 201	7			MODEL:		NA		
F4011 IT						MED.				
FACILIT			***			MFR:		NA		
	St. Paul Park F	Refining Co	. LILC		-					
EMISSIO	ON SUBJECT ITEM:	EU 088				EMISSION	LIMIT AN	ND AVERAGI	E TIME:	
		Unit Start	up - 10/2	0/2008	•	>	550 Deg	F - 3 ho	ur rollin	ng average
					•					
EMISSIC	ON UNIT(S):	NP VEPR Ph	ase 1			EMISSION	BASIS:	Title V	Permit	
								MN R. 70	07.0800	
ASSOCI	ATED ITEMS:	TREA10, TR	EA7, STRU	25	•					
						TOTAL OP				
						OF EMISS	ION UNIT	-	00	-
A. EMIS	SION DATA SUMMA	ARY				B. CEM PE	RFORM	ANCE SUMM	ARY	
1	DURATION OF EXC	CESS EMISSIC	NS (HRS)			1 DU	JRATION	OF CEM DO	WNTIME D	DURING
ļ	a) Startup/Shutdowr			0.00		sc	OURCE O	PERATION	HRS)	
	b) Control equipmer	nt		0.00	-	a)	Monitor n	nalfunction	,	0.00
	c) Process problems	3		0.00	•	b)	Non-mon	itor malfunct	on	0.00
	d) Other known caus			0.00	•	c)	QA calibr	ation		0.00
	e) Unknown causes			0.00	•	d)	Other kno	own causes		0.00
	f) Soot blowing			0.00	•	e)	Unknown	causes		0.00
	g) Fuel problems			0.00	•					
2	TOTAL DURATION	(HRS)		0.00		2 TC	TAL DUI	RATION (HR	S)	0.00
1	PERCENT OF TOTA				•	3 PE	RCENT (OF TOTAL	,	
	EXCESS EMISSION	NS		0.00%	_	CE	EM DOWI	NTIME		0.00%
		FOR OPACIT	Y, RECORD	ALL TIMES	IN MI	NUTES. FO	OR GASE	S, RECORD	ALL TIMES	IN HOURS.
% Total	Excess Emissions =		Total Durati	on of Evens	e Emie	sions / /Tot	al Operati	ing Time - CE	EM Downtin	20)
						•	ai Operati	ing time - Co	INI DOWILLIN	ie)
% Total	CEM Downtime =		CEM Down	time / Total	Operat	ing Time				
NOTES:						<u></u>				· · · · · · · · · · · · · · · · · · ·
	eedances: I certify ti exceedances during									t of my knowledge there
knowled	ge the information is	valid.	renou. 1 cell	iy ulat i dili	101111110	with the In	normauor	i ni una repor	t and that to	the best of Hig
	TED BY:	See certif	ication p	age at fr	ont o	of report			DATE:	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		NP VEPR Phase 1	
POLLUTANT MONITORED:		Temperature	
	TOTAL		
DATE/TIME	DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION
DATE/TIME	(111(0)	average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_110 00000 0111100101101	
1000	0.00		
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	
a) December makings			
c) Process problems 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_NO excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
e) Unknown causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	
D. Co at blassing			
f) Soot blowing			
1/1/2017		Na avagga amiggian-	
4/1/2017 _ Total	0.00	No excess emissions.	
iotai	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	-	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203	(AI ID 447)
EMISSION UNIT(S):		NP VEPR Phase 1		
POLLUTANT MONITORED:		Temperature		
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION		
a) Monitor malfunction				
Total	0.00	_		
b) Non-monitor malfunction				
Total	0.00	-		
c) QA calibration				
Total	0.00	-		
d) Other known causes				
Total	0.00	-		
e) Unknown causes				
Total	0.00	-		

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx	co	CO2	O2	TRS	H2S	HCL	Opacity
	Other: (Temperature		_	MONITOR				
REPORTING QUARTER:	First, 20	17		-	MODEL:		NA		
FACILITY:					MFR:		NΑ		
St. Paul Park I	Refining Co	. LLC		_					
				_					
EMISSION SUBJECT ITEM:	EU 089			_			ID AVERAGI		
					>	550 Deg	F - 3 ho	ur rollir	ng average
EMISSION UNIT(S):	NP VEPR P	nase 2		_					
A000014TED ITEM					EMISSION	I BASIS:	Title V		
ASSOCIATED ITEMS:	TREA6, TRI	EA8, STRU29		-			MN R. 70	07.0800	
					TOTAL OF	0 T 1 N T 1 N 1 C	LIOUDE		
					TOTAL OF OF EMISS			•	
					OF EIVIGG	ION ONL	-	0	
A. EMISSION DATA SUMM	ARY				B CEM PI	FREORMA	ANCE SUMM	IARY	
					15.05				
1 DURATION OF EX	CESS EMISSIO	ONS (HRS)			1 0	URATION	OF CEM DO	WNTIME (DURING
a) Startup/Shutdow			0.00		S	OURCE O	PERATION	(HRS)	
b) Control equipmer		_	0.00	_			nalfunction	,	0.00
c) Process problem		_	0.00	-	1		itor malfuncti	on	0.00
d) Other known cau			0.00	-	1 '	QA calibr			0.00
e) Unknown causes			0.00	-	1		own causes		0.00
f) Soot blowing		_	0.00	_		Unknown			0.00
g) Fuel problems		_	0.00	-					
2 TOTAL DURATION	(HRS)	_	0.00	-	2 TO	OTAL DUF	RATION (HR	S)	0.00
3 PERCENT OF TOT	ÄL	_		_	3 PI	ERCENT (OF TOTAL	,	
EXCESS EMISSION	NS		0.00%		CI	EM DOWN	NTIME		0.00%
	FOR OPACI	TY, RECORD A	LL TIMES	S IN MI	NUTES. FO	OR GASES	S, RECORD	ALL TIMES	IN HOURS.
% Total Excess Emissions =		Total Duration	of Exces	ss Emis	ssions / (Tot	al Operation	ng Time - CE	M Downtim	ne)
% Total CEM Downtime =		CEM Downtim	ne / Total	Operat	ting Time				
NOTES:									
110120.									
									······································
If no exceedances: I certify t	hat the require	d analyses were	e made, t	hat I ar	n familiar wi	ith the resi	uits, and that	to the best	of my knowledge there
were no exceedances during knowledge the information is	the reporting (period. I certify	that I am	familia	r with the in	formation	in this report	and that to	the best of my
SUBMITTED BY:	See certi	Eication pag	e at fi	cont c	of report		_	DATE:	

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		NP VEPR Phase 2	·
POLLUTANT MONITORED:		Temperature	
	TOTAL		
DATE/TIME	DURATION (HRS)	MIN. TEMP. (°F, 3-hr average)	CAUSE/CORRECTIVE ACTION
a) Startup/Shutdown			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_	
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_	
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
a) Linknown agusag			
e) Unknown causes 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_110 000000 011110010110.	
f) Soot blowing			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
a) Eugl problems			
g) Fuel problems 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	2.00000 011110010110.	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		NP VEPR Phase 2	
POLLUTANT MONITORED:		Temperature	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total d) Other known causes	0.00	-	
Total e) Unknown causes	0.00	-	
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

DATE:

EXCESS EMISSION AND CEM REPORTING FORM

POLLUTANT (circle one):	SO2 Other:	NOX	со	CO2	O2	TRS	H2S	HCL	Opacity
REPORTING QUARTER:	First, 201	7			MONITO MODEL:	К	Syscon/Ura Magnos 206	s 26 - NOx - O ₂	
FACILITY: St. Paul Park Res	ining Co. I	.LC			MFR: _	ABB			
EMISSION SUBJECT ITEM:	EQUI42						AND AVERAG		rage
EMISSION UNIT(S):	Boiler 7 Boiler 16-	B-7			EMISSIC	N BASIS	S:	NSPS Db	
ASSOCIATED ITEMS:	COMG27 (BO	ilers 7&8), TRU44	EQUI0212	2,	OPERAT	'ING HO	OURS OF EMISS	SION UNIT:	2160
A. EMISSION DATA SUMMAR	Y				B. CEM	Perform	ance Summar	у	
DURATION OF EXCE	SS EMISSIONS	(HRS)					ON OF CEM DO		RING
1		lb/mmbtu (30 Day) .				SOURC	E OPERATION	(HRS)	
a) Startup/Shutdown	-	0.00				a) Manite	or molfunction		0.00
b) Control equipment c) Process problems	-	0.00				,	or malfunction nonitor malfunct	tion .	0.00
d) Other known causes	-	0.00				,	libration		0.00
e) Unknown causes	-	0.00				,	known causes	•	9.00
f) Soot blowing	_	0.00				e) Unkno	own causes		0.00
g) Fuel problems		0.00						·	
2 TOTAL DURATION (H	RS)	0.00			2	TOTAL E	DURATION (HF	RS)	9.00
3 PERCENT OF TOTAL					3	PERCE	NT OF TOTAL		
EXCESS EMISSIONS	-	0.00%			'	CEM DC	OWNTIME		0.42%
	FOR OPACIT	Y, RECORD AL	L TIMES IN	N MINU	ITES. FO	R GASE	S, RECORD AL	LL TIMES IN H	OURS.
% Total Excess Emissions =		Total Duration o	of Excess Er	missior	ns / (Total	— Operatin	ng Time - CEM (Downtime)	
% Total CEM Downtime = NOTES:		CEM Downtime	/ Total Ope	erating	Time				
If no exceedances: I certify that exceedances during the reportir valid.									

See certification page at front of report

SUBMITTED BY:

EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AC	DFILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Boiler 16-B-7		
POLLUTANT MONITORED:		NOx (lbs/mmbtu)		
	TOTAL			
C A TC CT 14 P	DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	<u> </u>
a) Startup/Shutdown				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
a). Unknown agusag				
e) Unknown causes 1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	_		
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	=		

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		16-B-7	
POLLUTANT MONITORED:		NOx	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue. Missing data.	
Total	9.00	-	
e) Unknown causes			
Total	0.00	-	

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx FLOW	со	CO2	02	TRS	H2S	HCL	Opacity
REPORTING QUARTER:	First, 201	7			MONITO MODEL:		Fuel Gas Fl	Low Rate/F	G H2S CEM
FACILITY: St. Paul Park Ref	ining Co. LLC				MFR:				
				•			AND AVERAG		
EMISSION SUBJECT ITEM:	EQUI42				-	0.025 lb	SO2/mmbtu	- 3 hour	rolling average
EMISSION UNIT(S):	Boiler 7 Boiler 16-1	3-7			EMISSIO	ON BASIS:		SIP for S	D2 NAAQS
ASSOCIATED ITEMS:	COMG7, COM	327, EQUI16	3, STRU44						
					OPERAT	ring Houi	RS OF EMISS	SION UNIT:	2160
A. EMISSION DATA SUMMAR	<u> </u>				B. CEM	Performa	nce Summar	v	
DURATION OF EXCE		HRS)					N OF CEM DO		URING
1		,	lb/m m btu		- 1		OPERATION		
a) Startup/Shutdown			0.00					· · · · - /	Fuel Gas
b) Control equipment		•	0.00	•		a) Monitor	malfunction		0.00
c) Process problems		•	0.00	•	1		nitor malfunct	ion	0.00
d) Other known cause	5	•	0.00	•	1	c) QA calil			0.00
e) Unknown causes		•	0.00	•		d) Other k	nown causes		9.00
f) Soot blowing		•	0.00	•	İ	e) Unknow	n causes		0.00
g) Fuel problems		-	0.00	-					
2 TOTAL DURATION (H	RS)	•	0.00	•	2	TOTAL DI	JRATION (HR	S)	9.00
3 PERCENT OF TOTAL	,	•		•			OF TOTAL	-,	
EXCESS EMISSIONS		-	0.00%	•	1	CEM DOV			0.42%
	FOR OPACIT	Y, RECORD A	ALL TIMES IN N	MINUTES. FOR	GASES, F	RECORD A	ALL TIMES IN	HOURS.	·
% Total Excess Emissions =		Total Duration	of Excess Em	issions / (Total	Operating 1	Time - CEM	1 Downtime)		
% Total CEM Downtim	e =	CEM Downtin	ne / Total Opera	ating Time					
NOTES:									
If no exceedances: I certify that during the reporting period. I ce									
SUBMITTED BY:	See certifi	.cation pag	e at front o	of report		,	-	DATE:	

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (A	I ID 447)
EMISSION UNIT(S):		Boiler 16-B-7			
POLLUTANT MONITORED:		SO2 lb/mmbtu			
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION CA	AUSE/CORRECTIVE ACTION		
a) Startup/Shutdown 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
b) Control equipment 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			
c) Process problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			
e) Unknown causes 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		16-B-7		
POLLUTANT MONITORED:		Fuel Gas Flow Rate		
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE	ACTION	
a) Monitor malfunction				
Total	0.00	-		
b) Non-monitor malfunction				
Total -	0.00	-		
c) QA calibration				
Total -	0.00	-		
d) Other known causes 1/28/2017 0:00				
1/28/2017 9:00 _ Total	9.00	_Communications issue.	Missing data.	
e) Unknown causes				
Total -	0.00	-		

AQD FILE#: #0203 (AI ID 447)

FACILITY: St. Paul Park Refining Co. LLC EMISSION SUBJECT ITEM: EQUI43 EMISSION UNIT(S): Boiler 8 Boiler 16-B-8	MONITOR Syscon/Uras 26 - NOX MODEL: Magnos 206 - O2 MFR: ABB EMISSION LIMIT AND AVERAGE TIME: 0.20 lb/mmbtu - 30 Day rolling average EMISSION BASIS: NSPS Db OPERATING HOURS OF EMISSION UNIT: 2160 B. CEM Performance Summary
EMISSION UNIT(S): EMISSION UNIT(S): Boiler 8 Boiler 16-B-8	EMISSION LIMIT AND AVERAGE TIME: 0.20 lb/mmbtu - 30 Day rolling average EMISSION BASIS: NSPS Db OPERATING HOURS OF EMISSION UNIT: 2160 B. CEM Performance Summary
EMISSION UNIT(S): Boiler 8 Boiler 16-B-8	0.20 lb/mmbtu - 30 Day rolling average EMISSION BASIS: NSPS Db OPERATING HOURS OF EMISSION UNIT: 2160 B. CEM Performance Summary
Boiler 16-B-8	OPERATING HOURS OF EMISSION UNIT: 2160 B. CEM Performance Summary
	B. CEM Performance Summary
ASSOCIATED ITEMS: COMG27 (Boilers 7&8), EQUI215, EQUI217, STRU45	
A. EMISSION DATA SUMMARY	
DURATION OF EXCESS EMISSIONS (HRS)	1 DURATION OF CEM DOWNTIME DURING
lb/mmbtu	
(30-Day)	SOURCE OPERATION (HRS)
a) Startup/Shutdown 0.00	Fuel Gas
b) Control equipment 0.00	a) Monitor malfunction 0.00
c) Process problems 0.00	b) Non-monitor malfunction 0.00
d) Other known causes 0.00	c) QA calibration 0.00
e) Unknown causes 0.00	d) Other known causes 9.00
f) Soot blowing 0.00	e) Unknown causes 0.00
g) Fuel problems 0.00	· ·
2 TOTAL DURATION (HRS) 0.00	2 TOTAL DURATION (HRS) 9.00
3 PERCENT OF TOTAL	3 PERCENT OF TOTAL
EXCESS EMISSIONS0.00%	CEM DOWNTIME 0.42%
FOR OPACITY, RECORD ALL TIMES IN MINU	TES. FOR GASES, RECORD ALL TIMES IN HOURS.
% Total Excess Emissions = Total Duration of Excess Emission	ns / (Total Operating Time - CEM Downtime)
% Total CEM Downtime = CEM Downtime / Total Operating NOTES:	Time
If no exceedances: I certify that the required analyses were made, that I am familiexceedances during the reporting period. I certify that I am familiar with the inform SUBMITTED BY: See certification page at front of	mation in this report and that to the best of my knowledge the information is valid.

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203	(AI ID 447)
EMISSION UNIT(S):		Boiler 16-B-8			
POLLUTANT MONITORED:		NOx (1bs/mmbtu)			
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	I	
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.			
Total	0.00	-			
b) Control equipment 1/1/2017 4/1/2017		_No excess emissions.			
Total	0.00				
c) Process problems 1/1/2017 4/1/2017 Total		_No excess emissions.			
d) Other known causes 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
e) Unknown causes 1/1/2017 4/1/2017 Total		No excess emissions.			
f) Soot blowing 1/1/2017 4/1/2017 Total	0.00	_No excess emissions.			
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.			

REPORTING QUARTER:		First, 2017		AQD FILE#: #0203 (AI ID 447)				
EMISSION UNIT(S):		16-B-8						
POLLUTANT MONITORED:		NOx						
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE A	CTION					
a) Monitor malfunction								
Total	0.00	-						
b) Non-monitor malfunction								
Total	0.00							
c) QA calibration								
Total -	0.00	-						
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue. I	Missing data.					
Total -	9.00	-						
e) Unknown causes								
Total	0.00	-						

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	co	CO2	O2	TRS	H2S	HCL	Opacity
REPORTING QUARTER:	Other:	FLOW			MONITOI MODEL:		Fuel Gas Fl	ow Rate/F	G H2S CEM
FACILITY: St. Paul Park Refin	ing Co. LLC				MFR: _				
		·····							
EMISSION SUBJECT ITEM:	EQUI43						ND AVERAG		rolling average
EMISSION UNIT(S):	Boiler 8				-				
	Boiler 16-B	- 8			EMISSIO	N BASIS:		SIP for SC	02 NAAQS
ASSOCIATED ITEMS:	COMG7, COMG	27, EQUI163	3, STRU44						
					OPERAT	ING HOU	RS OF EMISS	SION UNIT:	2160
A. EMISSION DATA SUMMARY					B. CEM F	Performa:	nce Summar	/	
DURATION OF EXCESS		1 1	DURATIO	OF CEM DO	OWNTIME D	JRING			
1			lb/m m btu		SOURCE OPERATION (HRS)				
a) Startup/Shutdown			0.00						Fuel Gas
b) Control equipment		-	0.00		1	•	malfunction		0.00
c) Process problems		-	0.00		1		nitor malfuncti	on	0.00
d) Other known causes		-	0.00			c) QA calik			0.00
e) Unknown causes			0.00			•	nown causes		9.00
f) Soot blowing			0.00		•	e) Unknow	n causes		0.00
g) Fuel problems			0.00						
2 TOTAL DURATION (HRS)	-	0.00		2 7	TOTAL DL	RATION (HR	S)	9.00
3 PERCENT OF TOTAL					3 F	PERCENT	OF TOTAL		
EXCESS EMISSIONS		-	0.00%		(CEM DOV	NTIME		0.42%
	FOR OPACITY	, RECORD A	LL TIMES IN M	INUTES. FOR	R GASES, R	ECORD A	LL TIMES IN	HOURS.	
% Total Excess Emissions =		Total Duration	of Excess Emis	sions / (Total	Operating T	ime - CEN	Downtime)		
% Total CEM Downtime = NOTES:	<u>-</u>	CEM Downtim	ne / Total Operat	ting Time					
						· · · · · · · · · · · · · · · · · · ·			
If no exceedances: I certify that the									e were no exceedances du
SUBMITTED BY:			e at front of		,			DATE:	
		- 2 - 3							

REPORTING QUARTER:		First, 2017	·····	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		Boiler 16-B-8		
POLLUTANT MONITORED:		SO2 lb/mmbtu		
	TOTAL DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017		No. and and all all all all all all all all all al		
4/1/2017 Total	0.00	No excess emissions.		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_140 excess cillissions.		
c) Process problems 1/1/2017 4/1/2017 Total		No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017		_No excess emissions.		
Total	0.00			
e) Unknown causes 1/1/2017 4/1/2017 Total		No excess emissions.		
f) Soot blowing 1/1/2017				
4/1/2017 Total		No excess emissions.		
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			

REPORTING QUARTER:		First, 2017		AQD FILE #:	#0203 (AI ID 447)	
EMISSION UNIT(S):		16-B-8				
POLLUTANT MONITORED:		Fuel Gas Flow Rate				
_ DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE	ACTION			
a) Monitor malfunction						
Total	0.00	-				
b) Non-monitor malfunction						
Total	0.00	-				
c) QA calibration						
Total	0.00	-				
d) Other known causes 1/28/2017 0:00						
1/28/2017 9:00 Total	9.00 9.00	_Communications issue.	Missing data.			
e) Unknown causes						
Total	0.00	-				

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOX	co	CO2	<u>O2</u>	TRS	H2S	HCL	Opacity	
REPORTING QUARTER:	First, 20)17	-		MONITOR MODEL:	₹	ABB Limas Magnos 20			
FACILITY: St. Paul Park Ref	ining Co.	LLC			MFR: A	вв				
					EMISSION	LI I IANIT	AND AVERAG	CE TIME:		
EMISSION SUBJECT ITEM:	EQUI44				40 ppmvc			GE TIVIE.		
EMISSION UNIT(S):		ge Heater (8 rtup - 5/7/2			EMISSION BASIS: NSPS Ja					
ASSOCIATED ITEMS:	COMG7, EQ	QUI163, MR07	0, MR071	_ _						
NOTE: New MR numbers MR These numbers are					mit.		heater.	SSION UNIT:	2160	
A. EMISSION DATA SUMMARY					B CEMP	erform:	ance Summa	nv		_
DURATION OF EXCESS EMISSIONS (HRS)							ON OF CEM D		URING	
		ppmvd								
1 a) Startun/Shutdown		(30-Day)			5	OURC	E OPERATION	N (HRS)	Fuel Geo	
a) Startup/Shutdown b) Control equipment		0.00				\ Monito	or malfunction		Fuel Gas	
c) Process problems		0.00			1	•	nonitor malfun		0.00	
d) Other known causes		0.00			I	•	libration	0.0011	1.00	ļ
e) Unknown causes	•	0.00			1	•	known causes	s	9.00	- 1
f) Soot blowing		0.00				,	own causes		0.00	ł
g) Fuel problems		0.00			}					
2 TOTAL DURATION (H	RS)	0.00			2 T	OTAL D	DURATION (H	IRS)	10.00	
3 PERCENT OF TOTAL					3 P	ERCEN	NT OF TOTAL			- 1
EXCESS EMISSIONS		0.00%				EM DO	WNTIME		0.46%	
	FOR OPAC	ITY, RECORD	ALL TIMES I	N MINU	TES. FOR	GASES	, RECORD AL	L TIMES IN H	IOURS.	
% Total Excess Emissions =	-	Total Duration	of Excess Er	missions	/ (Total Op	erating	Time - CEM D	owntime)		
% Total CEM Downtime = NOTES:		CEM Downtim	ne / Total Ope	erating T	me					
									<u> </u>	
If no exceedances: I certify that exceedances during the reportin valid.										
SUBMITTED BY:	See certi	fication pa	ge at from	nt of r	eport			DATE:		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		EU 094		
POLLUTANT MONITORED:		NOx (ppmvd @ 0% 02)		
	TOTAL			
DATE/TIME	DURATIO N (HRS)	MAX CONCENTRATION	CAUSE/CORRECTIVE ACTION	
D) (TE) TIVIE	(11.10)	We de Controller	C/(OCEOOTALEOTIVE / COTTON	
a) Startup/Shutdown				
1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_140 0,0035 011110310113.		
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			

REPORTING QUARTER:		First, 2017	AQDFILE#: #0203 (AI ID 447)
EMISSION UNIT(S):		EU 094	
POLLUTANT MONITORED:		NOx	
DATE/TIME	TOTAL DURATIO N (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration 1/11/2017 14:00 1/11/2017 15:00 Total d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	1.00 1.00 9.00	Quaterly calibration gas audit. Communications issue. Missing data.	
Total	9.00	-	
e) Unknown causes			
Total	0.00		

AQD FILE#: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	co co	2 02	TRS	H2S	HCL	Opacity	
	Other:	FLOW		MONITO)R				
REPORTING QUARTER:	First, 201	7			MR074 (fuel gas) ll (fuel		(pilot gas)	
FACILITY:				WILLY.	нопеуме	II (Idei	yas/		
St. Paul Park R	efining Co.	LLC							
	·								
EMISSION SUBJECT ITEM:	EQUI44				DN LIMIT AI			ng average	
EMISSION UNIT(S):	FCC Charge	Heater (8-B-	1)				····		
	Unit Startı	up - 5/7/2012	!						
				EMISSI	ON BASIS:		SIP for S	O2 NAAQS	
ASSOCIATED ITEMS:	COMG7, EQU	I163							
	STRU34								
NOTE: New MR numbers I	MR074 and MR	075 have been	n selected for	the new 8-	R-1 heat	er fuel o	ras		
and pilot flow			are not yet en						
				OPERA	TING HOUF	RS OF EMIS	SSION UNIT:	2160	
A. EMISSION DATA SUMMA	RY		······	B CEM	Performan	ce Summa	rv		
DURATION OF EXC		IS (HRS)					DOWNTIMI	E DURING	
1			lb/mn	btu	SOURCE	OPERATIO	ON (HRS)		
i e			lb/mn 0.0		SOURCE	OPERATIO	ON (HRS)	_ 1	Fuel Gas
1	t.			0		OPERATION	, ,		Fuel Gas
1 a) Startup/Shutdown	t		0.0	0	a) Monitor		n		
1 a) Startup/Shutdown b) Control equipment			0.0	0 0 0	a) Monitor	r malfunctio	n	_ <u>!</u> 	0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes			0.0 0.0 0.0 0.0	0 0 0 0	a) Monitor b) Non-monitor c) QA cali d) Other b	r malfunction onitor malfu ibration known cause	n nction	_ <u>1</u> 	0.00 0.00 0.00 9.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing			0.0 0.0 0.0 0.0	0 0 0 0 0	a) Monitor b) Non-monitor c) QA cali d) Other b	r malfunctio onitor malfu ibration	n nction	_ <u></u>	0.00 0.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems	es		0.0 0.0 0.0 0.0 0.0	0 0 0 0 0	a) Monito b) Non-me c) QA cali d) Other le e) Unknow	r malfunction onitor malfun ibration known cause wn causes	n nction es	_ <u></u>	0.00 0.00 0.00 9.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (es (HRS)		0.0 0.0 0.0 0.0	0 0 0 0 0 0	a) Monitor b) Non-m c) QA cali d) Other k e) Unknow	r malfunction onitor malfu ibration known cause wn causes URATION (n nction es	_! 	0.00 0.00 0.00 9.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTA	es (HRS) AL		0.0 0.0 0.0 0.0 0.0 0.0	0 0 0 0 0 0	a) Monitor b) Non-m c) QA cali d) Other k e) Unknow TOTAL D 3 PERCEN	r malfunction onitor malful ibration known cause wn causes URATION (T OF TOTA	n nction es		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION (es (HRS) AL		0.0 0.0 0.0 0.0 0.0	0 0 0 0 0 0	a) Monitor b) Non-m c) QA cali d) Other k e) Unknow	r malfunction onitor malful ibration known cause wn causes URATION (T OF TOTA	n nction es		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTA	es (HRS) AL S	Y, RECORD ALL	0.0 0.0 0.0 0.0 0.0 0.0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	a) Monitor b) Non-m c) QA cali d) Other k e) Unknow 2 TOTAL D 3 PERCEN CEM DON	r malfunction onitor malfulibration known causes URATION (TOF TOTAL WITHING TOTAL CONTINE)	n nction es HRS)		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTA	es (HRS) AL S FOR OPACIT		0.0 0.0 0.0 0.0 0.0 0.0	0 0 0 0 0 0 0 0 0 0	a) Monitor b) Non-m c) QA cali d) Other i e) Unknow 2 TOTAL D 3 PERCEN CEM DOV	r malfunction onitor malfu ibration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) AL		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTAL EXCESS EMISSION	es (HRS) AL S FOR OPACIT	Total Duration of CEM Downtime /	0.0 0.0 0.0 0.0 0.0 0.0	O O O O O O O O O O O O O O O O O O O	a) Monitor b) Non-m c) QA cali d) Other i e) Unknow 2 TOTAL D 3 PERCEN CEM DOV	r malfunction onitor malfu ibration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) AL		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTAL EXCESS EMISSION % Total Excess Emissions = % Total CEM Downtime =	es (HRS) AL S FOR OPACIT	Total Duration of CEM Downtime /	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	O O O O O O O O O O O O O O O O O O O	a) Monitor b) Non-m c) QA cali d) Other i e) Unknow 2 TOTAL D 3 PERCEN CEM DOV	r malfunction onitor malfu ibration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) AL		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTAL EXCESS EMISSION % Total Excess Emissions = % Total CEM Downtime =	es (HRS) AL S FOR OPACIT	Total Duration of CEM Downtime /	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	O O O O O O O O O O O O O O O O O O O	a) Monitor b) Non-m c) QA cali d) Other i e) Unknow 2 TOTAL D 3 PERCEN CEM DOV	r malfunction onitor malfu ibration known cause wn causes URATION (T OF TOTA WNTIME	n nction es HRS) AL		0.00 0.00 0.00 9.00 0.00
a) Startup/Shutdown b) Control equipment c) Process problems d) Other known caus e) Unknown causes f) Soot blowing g) Fuel problems 2 TOTAL DURATION 3 PERCENT OF TOTAL EXCESS EMISSION % Total Excess Emissions = % Total CEM Downtime =	es (HRS) AL S FOR OPACIT	Total Duration of CEM Downtime /	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	O O O O O O O O O O O O O O O O O O O	a) Monitor b) Non-m c) QA cali d) Other H e) Unknow 2 TOTAL D 3 PERCEN CEM DON SES, RECO	r malfunction onitor malfulibration (mown causes) URATION (TOF TOTAL WITH TIME (TOTAL TIME) CEM Down at to the be-	n nction es HRS) L MES IN HOU time)	RS.	0.00 0.00 0.00 9.00 0.00 9.00 0.42%

EXCESS EMISSION REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		EQUI44	_
POLLUTANT MONITORED:		SO2 lb/mmbtu	
	TOTAL DURATION		
DATE/TIME	(HRS)	MAX. CONCENTRATION CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown			
1/1/2017			
4/1/2017		_No excess emissions.	
Total	0.00		
b) Control equipment			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
c) Process problems			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00		
d) Other known causes			
1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	THE CAUSES CHIESIONS.	
-> Halanasa sassas			
e) Unknown causes 1/1/2017			
4/1/2017		No excess emissions.	
Total	0.00	_NO excess emissions.	
		•	
f) Soot blowing			
1/1/2017		M	
4/1/2017 _ Total	0.00	No excess emissions.	
iotai	0.00		
g) Fuel problems			
1/1/2017			
4/1/2017		_No excess emissions.	
Total	ባ ባበ		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0	203 (AI ID 447)	
EMISSION UNIT(S):		Heater 8-B-1 (EQUI44)				
POLLUTANT MONITORED:		Fuel Gas Flow Rate	··			
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	ON		<u>:</u>	
a) Monitor malfunction						
Total	0.00	-				
b) Non-monitor malfunction						
Total	0,00	-				
c) QA calibration						
Total	0.00	-				
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00		Communications issue. Missi	ng data.			
Total	9.00	-				
e) Unknown causes						
Total	0.00					

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other: _	NOx		CO2	O2	TRS	H2S HCL	Opacity		
REPORTING QUARTER:	First, 2017				MONITOR MODEL:	<	Syscon/Uras 26 - 0 Magnos 206 - 02	.0		
FACILITY:					MFR: A	BB				
St. Paul Park Re	fining Co. LLO									
					EMISSIO	N LIMIT A	AND AVERAGE TIME:			
EMISSION SUBJECT ITEM:	COMG27						Per Year - 12 month	rolling sum		
						for Bo	ilers 7 & 8 combined	as GP 032)		
EMISSION UNIT(S):	COMG27									
	Boilers 16-	B-7 and 1	L6-B-8		EMISSIO	N BASIS:	: TV Air Permit - Li			
ACCOCIATED ITEMS.	7011740 7017	BOIT					40 CFR 52.21, Minr	.R.7007.3000	1	
ASSOCIATED ITEMS:		EQUI42, EQUI43, EQUI213, EQUI214, EQUI216, EQUI217, STRU44,						Boiler 7	Boiler 8	
	Egotati, Egotato, Egotati, binosi,			4, SIRU45	OPERATI	NG HOU	IRS OF EMISSION UNIT:	2160	2160	
[T					
A. EMISSION DATA SUMMAR DURATION OF EXCE	•			nce Summary	IDING					
1	33 EIVII33IOI 4 3 (F	iko)	Ton/Year		1 DURATION OF CEM DOWNTIME DURING SOURCE OPERATION (HRS)					
a) Startup/Shutdown			0.00			OUNOL	Of Electricit (Fire)	Boiler 7	Boiler 8	
b) Control equipment			0.00		a) Monitor malfunction		0.00	0.00		
c) Process problems			0.00		b	,) Non-mo	onitor malfunction	0.00	0.00	
d) Other known cause:	3		0.00		c) QA cali	bration	0.00	0.00	
e) Unknown causes			0.00		d) Other k	nown causes	9.00	9.00	
f) Soot blowing			0.00		е) Unknov	vn causes	0.00	0.00	
g) Fuel problems			0.00							
2 TOTAL DURATION (F	RS)		0.00		i		URATION (HRS)	9.00	9.00	
3 PERCENT OF TOTAL					1		T OF TOTAL			
EXCESS EMISSIONS			0.00%			EM DOV	WNIME	0.42%	0.42%	
	FOR OPACITY	RECORD .	ALL TIMES IN MI	NUTES. FOR	GASES, RE	CORD A	LL TIMES IN HOURS.			
% Total Excess Emissions =	т	otal Duratio	on of Excess Emis	ssions / (Total C	perating Tir	ne - CEM	/ Downtime)		·	
% Total CEM Downtime =	C	EM Downti	me / Total Operat	ting Time						
NOTES: CEMS downtime for										
CEMS for Boiler combined CO limi		are dow	n. These pag	es are appl	licable o	nly for	r the			
					····		· · · · · · · · · · · · · · · · · · ·			
If no exceedances: I certify that the reporting period. I certify the								e were no excee	dances during	
SUBMITTED BY:	See certifi	cation pa	ige at front	of report			DATE:			

REPORTING QUARTER:		First, 2017	·	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		GP 032 - 16-B-7 and	16-B-8	
POLLUTANT MONITORED:		CO Ton/Year	·	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
b) Control equipment 1/1/2017 4/1/2017 _		_No excess emissions.		
Total	0.00			
c) Process problems 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions.		
d) Other known causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
e) Unknown causes 1/1/2017 4/1/2017 _ Total	0.00	_No excess emissions.		
f) Soot blowing 1/1/2017 4/1/2017 _ Total	0.00	No excess emissions,		
g) Fuel problems 1/1/2017 4/1/2017 Total	0.00	No excess emissions.		

REPORTING QUARTER:		First, 2017	AQD FILE #	#0203	(AI ID 447)	
EMISSION UNIT(S):		16-B-7				
POLLUTANT MONITORED:		.co				
	TOTAL DURATION					
DATE/TIME	(HRS)	CAUSE/CORRECTIVE ACTION				_
a) Monitor malfunction						
Total	0.00					
b) Non-monitor malfunction						
	2.20	-				
Total	0.00					
c) QA calibration						
Total	0.00	-				
d) Other known causes 1/28/2017 0:00		2				
1/28/2017 9:00	9.00	Communications issue. Missing data.				
Total	9.00	-				
e) Unknown causes						
Total -	0.00	-				

REPORTING QUARTER:		First, 2017	AQD FILE #:	#0203 (AI ID 447)	
EMISSION UNIT(S):		16-B-8		_	
POLLUTANT MONITORED:		СО			
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION			
a) Monitor malfunction					
Total	0.00	-			
b) Non-monitor malfunction					
Total	0.00	-			
c) QA calibration					
Total	0.00	-			
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00		_Communications issue. Missing data.			
Total	9.00	-			
e) Unknown causes					
Total	0.00	<u>.</u>			

AQD FILE # #0203 (AI ID 447)

POLLUTANT (circle one):	SO2 Other:	NOx	co	CO2	O2 TRS	H2S HCL	Opacity	
DEDOCTING OUTSET					MONITOR	Syscon/Uras 26 - NOx	<u> </u>	
REPORTING QUARTER:	First, 2017				MODEL:	Magnos 206 - O ₂		
FACILITY: St. Paul Park Ref	ining Co. LL				MFR:	ABB		
					EMISSION LIMIT	AND AVERAGE TIME:		
EMISSION SUBJECT ITEM:	COMG27					38 Tons Per Year - 1	2 month rol	ling sum
						(for Boilers 7 & 8 c	combined as	GP 032)
EMISSION UNIT(S):	COMG27							
	Boilers 16-	B-7 and 16	-B-8		EMISSION BASIS	TV Air Permit - Limi		NSR
ACCOUNTED ITEMS						40 CFR 52.21, Minn.E	2.7007.3000	
ASSOCIATED ITEMS:	EQUI42, EQU						B. 13.	
	EQUIZI4, EQ	U1215, EQU.	I217, STRU44	, STRU45	ODERATING HOLI	DO OF EMISSION LINES	Boiler 7	Boiler 8
					OPERATING HOU	RS OF EMISSION UNIT:	2160	2160
A. EMISSION DATA SUMMAR DURATION OF EXCE		(HRS)	40.04.0		1	N OF CEM DOWNTIME DU	RING	
1			ton/yr		SOURCE	OPERATION (HRS)	.	
a) Startup/Shutdown		-	0.00		-> **		Boiler 7	Boiler 8
b) Control equipment		-	0.00		,	malfunction	0.00	0.00
c) Process problems d) Other known cause	•	-	0.00		1	onitor malfunction	0.00	0.00
e) Unknown causes	5	-	0.00		c) QA cali	nown causes	9.00	9.00
f) Soot blowing		-	0.00		e) Unknov		0.00	0.00
g) Fuel problems		-	0.00		, , , , , , , , , , , , , , , , , , , ,		0.00	0.00
2 TOTAL DURATION (H	IRS)	-	0.00		2 TOTAL DI	JRATION (HRS)	9.00	9.00
3 PERCENT OF TOTAL	•	-			3 PERCENT	, ,		
EXCESS EMISSIONS		_	0.00%		CEM DO	VNTIME	0.42%	0.42%
	FOR OPACITY	, RECORD A	LL TIMES IN M	INUTES. FOR	GASES, RECORD	ALL TIMES IN HOURS.		
% Total Excess Emissions =		Total Duration	of Excess Emi	ssions / (Total C	Operating Time - CEN	// Downtime)		
				·	pperuning rand our	i Dominio,		
% Total CEM Downtime =		CEM Downtin	ne / Total Opera	ating Time				
NOTES: CEMS downtime for	the GP 032 c	ombined em	ission limit	t is reported	i if individuall	y or for both		
CEMS for Boiler 7	and Boiler 8	are down.	These page	es are applio	cable only for t	he		
combined NOx limi	t.							
If no exceedances: I certify that the reporting period. I certify the							ere were no exc	eedances during
SUBMITTED BY:	See certifi	cation page	at front o	f report		DATE:		

REPORTING QUARTER:		First, 2017		AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		GP 032 - 16-B-7 and 1	6-B-8	
POLLUTANT MONITORED:		NOx (Tons/Year)		
	TOTAL			
	DURATION			
DATE/TIME	(HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
1/1/2017				
4/1/2017 _		No excess emissions.		
Total	0.00	-		
b) Control equipment				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	=		
c) Process problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00			
d) Other known causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	•		
e) Unknown causes				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
f) Soot blowing				
1/1/2017				
4/1/2017		No excess emissions.		
Total	0.00	-		
g) Fuel problems				
1/1/2017				
4/1/2017		No excess emissions.		
Total _	0.00	=		

REPORTING QUARTER:		First, 2017	AQD FILE #:	#0203 (AI ID 447)
EMISSION UNIT(S):		16-B-7		
POLLUTANT MONITORED:		NOx		
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION		
Note: NOx CEM downs a) Monitor malfunction	ime is the	same downtime reported on the form	for Boiler 7 for NOx ppm	
Total	0.00			
b) Non-monitor malfunction				
Total	0.00			
c) QA calibration				
Total -	0.00			
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue. Missing data.		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		, sommer and the second		
Total	9.00			
e) Unknown causes				
Total	0.00			

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		16-B-8	
POLLUTANT MONITORED:		NOx	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
Note: NOx CEM downt a) Monitor malfunction	ime is the	same downtime reported on the form	for Boiler 8 for NOx ppm
Total -	0.00	-	
b) Non-monitor malfunction			
Total -	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes 1/28/2017 0:00 1/28/2017 9:00	9.00	Communications issue. Missing data.	
Total	9.00		
e) Unknown causes			
Total	0.00	-	

POLLUTANT (circle one): Other:	SO2 This report	NOx addresse	CO CO2		TRS	H2S	HCL Opacity	
REPORTING QUARTER: FACILITY: St. Paul Park Refinir	First, 2017			MONITOR MODEL: MFR:	Maxum II Siemens, Se	rial No. 00	01060	
	TREA13			EMISSION	LIMIT AND AV 162 ppm (3-			
EMISSION UNIT(S): TREA13 Refinery flare	stack		,	EMISSION	BASIS: 40 CFR 63	NESHAP SU	ıbpart Ja	
ASSOCIATED ITEMS:	FUGI73					TOTAL OPE	ERATING HOURS ON UNIT:	2160
A. EMISSION DATA SUMMARY		E	3. CEM PER	FORMANCI	SUMMARY			
1 DURATION OF EXCESS EF	MISSIONS		1 DURA	TION OF C	EM DOWNTIME			
EMISSIONS (HRS)	H2S_		DURII	NG SOURC	E OPERATION	(HRS)		
a) Startup/Shutdown	6.00		a) Moi	nitor malfund	ction	0.00		
b) Control equipment	0.00		b) Nor	n-monitor ma	alfunction	0.00		
c) Process problems	0.00		c) QA	calibration		0.00		
d) Other known causes	6.00		d) Oth	er known ca	uses	39.00		
e) Unknown causes	60.00		e) Uni	known cause	es	0.00		
f) Soot blowing	0.00							
g) Fuel problems	0.00		2 TOTA	L DURATIO	N (HRS)	39.00		
2 TOTAL DURATION (HRS)	72		3 PERC	ENT OF TO	TAL			
3 PERCENT OF TOTAL EXCESS EMISSIONS	3%		CEMI	OOWNTIME		1.81%		
	FOR OPACITY,	RECORD A	ALL TIMES IN	N MINUTES	FOR GASES,	RECORD ALL	TIMES IN HOURS.	
% Total Excessotationeof SARA				Time - CEN	1 Downtime)			
% Total CEM Downtime = NOTES:	CEM Downtime	/ Total Ope	erating Time					
If no exceedances: I certify that exceedances during the reporting persuances SUBMITTED BY:		at I am fami	liar with the i	nformation i	n this report and			

SARA Reportable Emissions Report - H2S (i.e., > 162 ppm)

REPORTING QUARTER:	I	First, 20	017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		TREA13	Refinery flare stack	
POLLUTANT MONITORED:		NA		
DATE/TIME	TOTAL DURATION (HRS)		NCENTRATION lour rolling avg.) CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown				
2/6/2017 7:00 2/6/2017 10:00 2/17/2017 12:00	3.00	387	Please see Incident C in the summary report.	
2/17/2017 15:00 Total	3.00 6.00	545	Please see Incident C in the summary report.	
b) Control equipment 1/1/2017 4/1/2017				
Total	0.00	-		
c) Process problems 1/1/2017				
4/1/2017 Total	0.00	-		
d) Other known causes 1/6/2017 16:00	0.00			
1/6/2017 19:00 2/7/2017 20:00	3.00	688	Please see Incident A in the summary report.	
2/7/2017 23:00 Total	3.00 6.00	_ 181	Please see Incident C in the summary report.	
e) Unknown causes 1/11/2017 7:00				
1/11/2017 10:00 2/8/2017 8:00	3.00	283	Please see Incident B in the summary report.	
2/10/2017 17:00 Total	57.00 60.00	- 2471	Please see Incident D in the summary report.	
f) Soot blowing				
1/1/2017 4/1/2017				
Total	0.00	-		
g) Fuel problems 1/1/2017 4/1/2017				
Total	0.00	-		

		DOVARTIME REPORT
REPORTING QUARTER:		First, 2017 AQD FILE #: #0203 (AI ID 447
EMISSION UNIT(S):		TREA13 Refinery flare stack
POLLUTANT MONITORED:		H2S
DATE/TIME	TOTAL DURATION (HRS)	ORRECTIVE ACTION
a) Monitor malfunction		
Total	0.00	_
b) Non-monitor malfunction		
Total	0,00	-
c) QA calibration		
Total	0.00	_Quarterly calibration gas audit.
d) Other known causes		
1/5/2017 11:00 1/5/2017 13:00 1/18/17 8:00	2.00	Low air pressure which actuates valves and resulted in an analyzer fault.
1/18/17 10:00 2/23/2017 6:00	2.00	Maintenance - replacement of detectors.
2/24/2017 17:00	35.00	Failed calibration due to plugging. Maintenance completed on analyzer w/ calibration/validation.

39.00

0.00

Total
e) Unknown causes

Total

AQD FILE #: #0203 (AI ID 447)

POLLUTANT (circle one):	SO2	NOx	co	CO2	O2	TRS	H2S	HCL	Opacity
	Other:	Flow							
					MONITO	R			
REPORTING QUARTER:	First, 20	1.7			MODEL:		DigitalFl	ow GF868	<u></u>
FACILITY:					MFR:	General	Electric		
St. Paul Park Re	fining Co.	LLC							
					WORK P	RACTICE	STANDARD A	AND AVERAGE	TIME:
EMISSION SUBJECT ITEM:	TREA13					1.31 MM	MSCF/24-hr	Rolling Avg	
EMISSION UNIT(S):	TREA13 Ref	finery flare	e stack						
					EMISSIO				
ACCOCIATED ITEMS.	DUGTE 2					40 CFR	63 NESH	AP Subpart	Ja
ASSOCIATED ITEMS:	FUGI73								-
					OPERAT	ING HOUE	RS OF EMISSI	ION UNIT:	
					OI LIV		(O O) EMILOO	Total	
								2160	
									-
A. EMISSION DATA SUMMAR	RY				B. CEM F	Performan	ce Summary		
1 DURATION OF EXCE	SS EMISSION	S (HRS)			1 DURAT	TON OF C	EM DOWNTII	ME DURING	
			MMSCF/24-hr		SOURCE	OPERAT	ION (HRS)		
a) Startup/Shutdown			0.00						
b) Control equipment			0.00		a) Monito	r malfuncti	on	0.00	_
c) Process problems			0.00		b) Non-m	onitor malf	function	0.00	_
d) Other known cause	es		0.00		c) QA cal	ibration		0.00	_
e) Unknown causes			0.00		1 1	known cau		0.00	_
f) Soot blowing			0.00		e) Unkno	wn causes		0.00	-
g) Fuel problems			0.00		ĺ				
2 TOTAL DURATION (HRS)		0.00			DURATIO		0.00	-
3 PERCENT OF TOTAL	L				3 PERCE	ENT OF TO	OTAL		
EXCESS EMISSIONS	3		0.00%		CEM DO	WNTIME		0.00%	-
	FOR OPACI	TY. RECORD A	ALL TIMES IN MIN	UTES FOR	GASES RI	FCORD AI	1 TIMES IN E	IOURS	
							<u></u>		
% Total Excess Emissions =		Total Duratio	n of Excess Emiss	ions / (Total	Operating T	ime - CEM	Downtime)		
% Total CEM Downtime =		CEM Downtin	me / Total Operatir	ng Time					
NOTES:									
· · · · · · · · · · · · · · · · · · ·									
									
If no exceedances: I certify that exceedances during the reportivalid.									
SUBMITTED BY:	See certif	fication pag	ge at front of	f report			_	DATE:	

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)	
EMISSION UNIT(S):		TREA13 Refinery flare	_	
POLLUTANT MONITORED:		MMBTU/24-hr Rolling A	vg.	
DATE/TIME	TOTAL DURATION (HRS)	MAX. CONCENTRATION	CAUSE/CORRECTIVE ACTION	
a) Startup/Shutdown 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_		
b) Control equipment 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_		
c) Process problems 1/1/2017 4/1/2017		_No excess emissions.		
Total	0.00			
d) Other known causes1/1/20174/1/2017		_No excess emissions.		
Total	0.00			
e) Unknown causes 1/1/2017 4/1/2017		_No excess emissions.		
Total	0.00			
f) Soot blowing 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00	_		
g) Fuel problems 1/1/2017 4/1/2017		No excess emissions.		
Total	0.00			

CONTINUOUS EMISSION MONITOR DOWNTIME REPORT

REPORTING QUARTER:		First, 2017	AQD FILE #: #0203 (AI ID 447)
EMISSION UNIT(S):		TREA13 Refinery flare stack	
POLLUTANT MONITORED:		Flare Vent Gas Flow Rate	
DATE/TIME	TOTAL DURATION (HRS)	CAUSE/CORRECTIVE ACTION	
a) Monitor malfunction			
Total	0.00	-	
b) Non-monitor malfunction			
Total	0.00	-	
c) QA calibration			
Total	0.00	-	
d) Other known causes			
Total	0.00	-	
e) Unknown causes			
Total	0.00	-	

Appendix A AMP Monitoring Data

	Α	MP Data - Sample Point		· · · · · · · · · · · · · · · · · · ·					
Unit		Must take at least one s	sample semi-annually with	a minimum of thre	Total sulfur-Antek	samples	Г	г	H25 Conc
Name	Code Name	Sample ID	Sample Date	Sample Time	1	Instrument ID	Vol H2S	Vol LPG	(ppmv)
FCC	C3/C4 SPLTR OVHD	S2154402.D	1/2/2017	4:30	1.24	Antek#2	0.9	575,259.305	1.5
FCC	C3/C4 SPLTR OVHD	S2154640.D	1/3/2017	4:30	1.16	Antek#2	0.8	575,259.338	1.4
FCC	C3/C4 SPLTR OVHD	S2154913.D	1/4/2017	4:30	0.44	Antek#1	0.3	575,259.635	0.5
FCC	C3/C4 SPLTR OVHD	S2155179.D	1/5/2017	4:30	0.89	Antek#2	0.6	575,259.449	1.1
FCC	C3/C4 SPLTR OVHD	S2155426.D	1/6/2017	4:30	0.69	Antek#2	0.5	575,259.532	0.9
FCC	C3/C4 SPLTR OVHD	S2156145.D	1/9/2017	4:30	0.64	Antek#1	0.5	575,259.552	0.8
FCC	C3/C4 SPLTR OVHD	S2156410.D	1/10/2017	4:30	0.65	Antek#1	0.5	575,259.548	0.8
FCC	C3/C4 SPLTR OVHD	S2156693.D	1/11/2017	4:30	0.97	Antek#2	0.7	575,259.416	1.2
FCC	C3/C4 SPLTR OVHD	S2156956.D	1/12/2017	4:30	0.68	Antek#2	0.5	575,259.536	0.8
FCC	C3/C4 SPLTR OVHD	S2157222.D	1/13/2017	4:30	0.96	Antek#2	0.7	575,259.420	1.2
FCC	C3/C4 SPLTR OVHD	S2157931.D	1/16/2017	4:30	0.71	Antek#2	0.5	575,259.523	0.9
FCC	C3/C4 SPLTR OVHD	S2158196.D	1/17/2017	4:30	0.74	Antek#2	0.5	575,259.511	0.9
FCC	C3/C4 SPLTR OVHD	S2158469.D	1/18/2017	4:30	0.73	Antek#2	0.5	575,259.515	0.9
FCC	C3/C4 SPLTR OVHD	S2158959.D	1/19/2017	11:08	0.67	Antek#2	0.5	575,259.540	0.8
FCC	C3/C4 SPLTR OVHD	S2159019.D	1/20/2017	4:30	0.51	Antek#2	0.4	575,259.606	0.6
FCC	C3/C4 SPLTR OVHD	S2159787.D	1/23/2017	4:30	0.39	Antek#2	0.3	575,259.656	0.5
FCC	C3/C4 SPLTR OVHD	S2160042.D	1/24/2017	4:30	0.34	Antek#1	0.2	575,259.676	0.4
FCC	C3/C4 SPLTR OVHD	\$2160318.D	1/25/2017	4:30	0.35	Antek#2	0.3	575,259.672	0.4
FCC	C3/C4 SPLTR OVHD	S2160588.D	1/26/2017	4:30	0.61	Antek#2	0.4	575,259.565	0.8
FCC	C3/C4 SPLTR OVHD	\$2160853.D	1/27/2017	4:30	0.36	Antek#1	0.3	575,259.668	0.4
FCC	C3/C4 SPLTR OVHD	S2161539.D	1/30/2017	4:30	0.33	Antek#1	0.2	575,259.680	0.4
FCC	C3/C4 SPLTR OVHD	S2161789.D	1/31/2017	4:30	0.44	Antek#2	0.3	575,259.635	0.5
FCC	C3/C4 SPLTR OVHD	S2162051.D	2/1/2017	4:30	0.3	Antek#1	0.2	575,259.693	0.4
FCC	C3/C4 SPLTR OVHD	S2162383.D	2/2/2017	4:30	0.4	Antek#2	0.3	575,259.651	0,5
FCC	C3/C4 SPLTR OVHD	S2162637.D	2/3/2017	4:30	0.38	Antek#1	0.3	575,259.660	0.5
FCC	C3/C4 SPLTR OVHD	S2163374.D	2/6/2017	4:30	0.48	Antek#2	0.3	575,259.618	0.6
FCC	C3/C4 SPLTR OVHD	S2163641.D	2/7/2017	4:30	0.49	Antek#1	0.4	575,259.614	. 0.6
FCC	C3/C4 SPLTR OVHD	S2163926 D	2/8/2017	4:30	0,8	Antek#2	0.6	575,259.486	1.0
FCC	C3/C4 SPLTR OVHD	S2164194.D	2/9/2017	4:30	1.01	Antek#1	0.7	575,259.399	1.3
FCC	C3/C4 SPLTR OVHD	S2164461.D	2/10/2017	4:30	0.39	Antek#1	0.3	575,259.656	0.5
FCC	C3/C4 SPLTR OVHD	S2165162.D	2/13/2017	4:30	0.44	Antek#2	0.3	575,259.635	0.5
FCC	C3/C4 SPLTR OVHD	S2165417.D	2/14/2017	4:30	0.71	Antek#2	0.5	575,259.523	0.9
FCC	C3/C4 SPLTR OVHD	\$2165678.D \$2165928.D	2/15/2017	4:30	0.53 0.56	Antek#1	0.4	575,259.598	0.7
FCC	C3/C4 SPLTR OVHD	\$2166201.D	2/16/2017 2/17/2017	4:30 4:30	0.5	Antek#2 Antek#1	0.4	575,259.585	0.7
FCC	C3/C4 SPLTR OVHD	S2166889.D	2/20/2017	4:30	0.38	Antek#2	0.4	575,259.610	0.6
FCC FCC	C3/C4 SPLTR OVHD C3/C4 SPLTR OVHD	S2166689.D	2/21/2017	4:30	0.46	Antek#2	0.3	575,259.660	0.5
FCC	C3/C4 SPLTR OVHD	S2167455.D	2/22/2017	4:30	0.38	Antek#2	0.3	575,259.627 575,259.660	0.6
FCC	C3/C4 SPLTR OVHD	S2167733.D	2/23/2017	4:30	0.36	Antek#1	0.3	575,259.668	0.5
FCC	C3/C4 SPLTR OVHD	S2168034.D	2/24/2017	4:30	0.49	Antek#1	0.4	575,259.614	0.4
FCC	C3/C4 SPLTR OVHD	S2169298.D	3/1/2017	4:30	0.52	Antek#2	0.4	575,259.602	0.6
FCC	C3/C4 SPLTR OVHD	S2169780.D	3/2/2017	14:01	0.56	Antek#1	0.4	575,259.585	0.7
FCC	C3/C4 SPLTR OVHD	S2169564.D	3/2/2017	4:30	0.66	Antek#1	0.5	575,259.544	0.8
FCC	C3/C4 SPLTR OVHD	\$2169832.D	3/3/2017	4:30	0.4	Antek#2	0.3	575,259.651	0.5
FCC	C3/C4 SPLTR OVHD	S2170571.D	3/6/2017	4:30	0.42	Antek#1	0.3	575,259.643	0.5
FCC	C3/C4 SPLTR OVHD	S2170836.D	3/7/2017	4:30	0.29	Antek#1	0.2	575,259.697	0.4
FCC	C3/C4 SPLTR OVHD	S2171625.D	3/10/2017	4:30	0.33	Antek#2	0.2	575,259.680	0.4
FCC	C3/C4 SPLTR OVHD	S2172338.D	3/13/2017	4:30	0.4	Antek#1	0.3	575,259.651	0.5
FCC	C3/C4 SPLTR OVHD	S2172595.D	3/14/2017	4:30	0.3	Antek#1	0.2	575,259.693	0.4
FCC	C3/C4 SPLTR OVHD	S2172857.D	3/15/2017	4:30	0.64	Antek#2	0.5	575,259.552	0.8
FCC	C3/C4 SPLTR OVHD	S2173138.D	3/16/2017	4:30	0.43	Antek#2	0.3	575,259.639	0.5
FCC	C3/C4 SPLTR OVHD	S2173404.D	3/17/2017	4:30	0.41	Antek#2	0.3	575,259.647	0.5
FCC	C3/C4 SPLTR OVHD	S2174089.D	3/20/2017	4:30	0.29	Antek#2	0.2	575,259.697	0.4
FCC	C3/C4 SPLTR OVHD	S2174338.D	3/21/2017	4:30	0.48	Antek#2	0.3	575,259.618	0.6
FCC	C3/C4 SPLTR OVHD	S2174598.D	3/22/2017	4:30	0.31	Antek#1	0.2	575,259.689	0.4
FCC	C3/C4 SPLTR OVHD	S2174860.D	3/23/2017	4:30	0.38	Antek#2	0.3	575,259.660	0.5
FCC	C3/C4 SPLTR OVHD	S2175121.D	3/24/2017	4:30	0.44	Antek#2	0.3	575,259.635	0.5
FCC	C3/C4 SPLTR OVHD	S2175831.D	3/27/2017	4:30	0.36	Antek#2	0.3	575,259.668	0.4
FCC	C3/C4 SPLTR OVHD	S2176075.D	3/28/2017	4:30	0.4	Antek#2	0.3	575,259.651	0.5
FCC	C3/C4 SPLTR OVHD	S2176323.D	3/29/2017	4:30	0.42	Antek#2	0.3	575,259.643	0.5
FCC	C3/C4 SPLTR OVHD	S2176573.D	3/30/2017	4:30	0.4	Antek#2	0.3	575,259.651	0.5
FCC	C3/C4 SPLTR OVHD	S2176814.D	3/31/2017	4:30	0.4	Antek#2	0.3	575,259.660	0.5

Unit	Code Name	Sample ID	Sample Date	Sample	sulfur-Antek	Instrument ID	Vol H2S	Voi LPG	H2S Con
Name FCC	COMBINED PROPANE	S2154398.D	1/2/2017	4:30	(wmqq)	Antek#2	1.9	554,652.831	(ppmv)
FCC	COMBINED PROPANE	S2154635.D	1/3/2017	4:30	2.6 2.46	Antek#2	1.8	554,652.909	3.4
FCC	COMBINED PROPANE	S2154909.D	1/4/2017	4:30	2.53	Antek#1	1.8	554,652.870	3.3
FCC	COMBINED PROPANE	S2155174.D	1/5/2017	4:30	2.54	Antek#1	1.8	554,652.865	3.3
FCC	COMBINED PROPANE	S2155422.D	1/6/2017	4:30	2.42	Antek#2	1.7	554,652.931	3.1
FCC	COMBINED PROPANE	S2156141.D	1/9/2017	4:30	2.39	Antek#2	1.7	554,652.948	3.1
FCC	COMBINED PROPANE	S2156469.D	1/10/2017	10:30	1.66	Antek#1	1.2	554,653.353	2.1
FCC	COMBINED PROPANE	S2156405.D	1/10/2017	4:30	0	Antek#1	0.0	554,654.273	0.0
FCC	COMBINED PROPANE	S2156689.D	1/11/2017	4:30	2.01	Antek#1	1.4	554,653.159	2.6
FCC	COMBINED PROPANE	S2156951.D	1/12/2017	4:30	2.06	Antek#1	1.5	554,653.131	2.7
FCC	COMBINED PROPANE	S2157218.D	1/13/2017	4:30	1.27	Antek#2	0.9	554,653.569	1.6
FCC	COMBINED PROPANE	S2157927.D	1/16/2017	4:30	1.42	Antek#2	1.0	554,653.486	1.8
FCC	COMBINED PROPANE	S2158191.D	1/17/2017	4:30	1.77	Antek#2	1.3	554,653.292	2.3
FCC	COMBINED PROPANE	S2158465.D	1/18/2017	4:30	1.5	Antek#2	1.1	554,653.441	1.9
FCC	COMBINED PROPANE	S2158748.D	1/19/2017	4:30	9.94	Antek#1	7.1	554,648.760	12.9
FCC	COMBINED PROPANE	S2159015.D	1/20/2017	4:30	1.64	Antek#2	1.2	554,653,364	2.1
FCC	COMBINED PROPANE	S2159783.D	1/23/2017	4:30	1.89	Antek#1	1.4	554,653.225	2.4
FCC FCC	COMBINED PROPANE	S2160037.D	1/24/2017	4:30	1.76	Antek#1	1.3	554,653.297	2.3
FCC	COMBINED PROPANE COMBINED PROPANE	S2160314.D S2160583.D	1/25/2017 1/26/2017	4:30 4:30	1.45	Antek#1	1.0	554,653.469	1.9
FCC	COMBINED PROPANE	S2160883.D S2160849.D	1/27/2017	4:30	1.34 1.42	Antek#2 Antek#2	1.0	554,653.530 554,653.486	1.7
FCC	COMBINED PROPANE	S2160649.D	1/30/2017	4:30	1.54	Antek#1	1.1	554,653.419	2.0
FCC	COMBINED PROPANE	S2161784.D	1/31/2017	4:30	1.48	Antek#1	1.1	554,653.453	1.9
FCC	COMBINED PROPANE	S2162047.D	2/1/2017	4:30	0.75	Antek#1	0.5	554,653.857	1.0
FCC	COMBINED PROPANE	S2162378.D	2/2/2017	4:30	0.18	Antek#1	0.1	554,654.174	0.2
FCC	COMBINED PROPANE	S2162633.D	2/3/2017	4:30	0.92	Antek#2	0.7	554,653.763	1.2
FCC	COMBINED PROPANE	S2163370.D	2/6/2017	4:30	1.18	Antek#2	0.8	554,653.619	1.5
FCC	COMBINED PROPANE	S2163636.D	2/7/2017	4:30	1.58	Antek#2	1.1	554,653.397	2.0
FCC	COMBINED PROPANE	S2163922.D	2/8/2017	4:30	1.68	Antek#1	1.2	554,653.342	2.2
FCC	COMBINED PROPANE	S2164189.D	2/9/2017	4:30	1.38	Antek#1	1.0	554,653.508	1.8
FCC	COMBINED PROPANE	S2164457.D	2/10/2017	4:30	1.41	Antek#1	1.0	554,653.491	1.8
FCC	COMBINED PROPANE	S2165158.D	2/13/2017	4:30	6.28	Antek#1	4.5	554,650.790	8.1
FCC	COMBINED PROPANE	S2165412.D	2/14/2017	4:30	36.57	Antek#1	26.3	554,633.990	47.3
FCC	COMBINED PROPANE	S2165674.D	2/15/2017	4:30	27.27	Antek#2	19.6	554,639.148	35.3
FCC	COMBINED PROPANE	S2165923.D	2/16/2017	4:30	36.02	Antek#1	25.9	554,634.295	46.6
FCC	COMBINED PROPANE	S2166197.D	2/17/2017	4:30	6.85	Antek#1	4.9	554,650.474	8.9
FCC	COMBINED PROPANE	S2166885.D	2/20/2017	4:30	1.89	Antek#2	1.4	554,653.225	2.4
FCC	COMBINED PROPANE	S2167178.D	2/21/2017	4:30	2.2	Antek#2	1.6	554,653.053	2.8
FCC	COMBINED PROPANE	S2167451.D	2/22/2017	4:30	3.33	Antek#1	2.4	554,652.426	4.3
FCC FCC	COMBINED PROPANE COMBINED PROPANE	S2167728.D	2/23/2017	4:30	1.88	Antek#1	1.3	554,653.231	2.4
FCC	COMBINED PROPANE	S2168030.D S2168720.D	2/24/2017 2/27/2017	4:30 4:30	7.02	Antek#2 Antek#1	5.0 1.9	554,650.380 554,652.842	9.1
FCC	COMBINED PROPANE	S2168987.D	2/28/2017	4:30	1.95	Antek#2	1.4	554,653.192	2.5
FCC	COMBINED PROPANE	S2169294.D	3/1/2017	4:30	2.12	Antek#2	1.5	554,653.098	2.7
FCC	COMBINED PROPANE	S2169559.D	3/2/2017	4:30	2.98	Antek#1	2.1	554,652.621	3.9
FCC	COMBINED PROPANE	S2169828.D	3/3/2017	4:30	3.87	Antek#1	2.8	554,652.127	5.0
FCC	COMBINED PROPANE	S2170567.D	3/6/2017	4:30	2.33	Antek#2	1.7	554,652.981	3.0
FCC	COMBINED PROPANE	\$2170831.D	3/7/2017	4:30	2.89	Antek#2	2.1	554,652.670	3.7
FCC	COMBINED PROPANE	S2171120.D	3/8/2017	4:30	2.69	Antek#2	1.9	554,652.781	3.5
FCC	COMBINED PROPANE	S2171375.D	3/9/2017	4:30	5.36	Antek#1	3.8	554,651.300	6.9
FCC	COMBINED PROPANE	S2171621.D	3/10/2017	4:30	2.17	Antek#2	1.6	554,653.070	2.8
FCC	COMBINED PROPANE	S2172334.D	3/13/2017	4:30	1.76	Antek#2	1.3	554,653.297	2.3
FCC	COMBINED PROPANE	S2172590.D	3/14/2017	4:30	1.91	Antek#2	1.4	554,653.214	2.5
FCC	COMBINED PROPANE	S2172853.D	3/15/2017	4:30	1.95	Antek#1	1.4	554,653.192	2.5
FCC	COMBINED PROPANE	S2173133.D	3/16/2017	4:30	1	Antek#1	0.7	554,653.719	1.3
FCC	COMBINED PROPANE	S2173400.D	3/17/2017	4:30	0.27	Antek#1	0.2	554,654.124	0.3
FCC	COMBINED PROPANE	S2174085.D	3/20/2017	4:30	2.33	Antek#1	1.7	554,652.981	3.0
FCC	COMBINED PROPANE	S2174333.D	3/21/2017	4:30	1.87	Antek#2	1.3	554,653,236	2.4
FCC	COMBINED PROPANE	S2174594.D	3/22/2017	4:30	1.5	Antek#2	1.1	554,653.441	. 1.9
FCC	COMBINED PROPANE	S2174855.D	3/23/2017	4:30	1.03	Antek#2	0.7	554,653.702	1.3
FCC	COMBINED PROPANE	S2175117.D	3/24/2017	4:30	1.32	Antek#1	0.9	554,653.541	1.7
FCC	COMBINED PROPANE	S2175827.D	3/27/2017	4:30	2.17	Antek#1	1.6	554,653.070	2.8
FCC	COMBINED PROPANE	S2176070.D	3/28/2017	4:30	2.81	Antek#2	2.0	554,652.715	3.6
FCC	COMBINED PROPANE	S2176319.D	3/29/2017	4:30	0.31	Antek#1	0.2	554,654.101	0.4
FCC	COMBINED PROPANE	S2176568.D	3/30/2017	4:30	2.68	Antek#1	1.9	554,652.787	3.5

		le Point #3 - Isom Stripper least one sample semi-annu						
				Sample	total sulfur	T		H2S Conc
Unit Name	Code Name	Sample ID	Sample Date	Time	(ppmw)	Vol H2S	Vol LPG	(ppmv)
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2154442_FID1_A.CDF	1/2/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2154671_FID1_A.CDF	1/3/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2154955_FID1_A.CDF	1/4/2017 1/5/2017	4:30 4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2155206_FID1_A.CDF	1/6/2017	4:30	0.0	0.0	347,822.007 347,822.007	$\frac{1}{0.0}$
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2156185_FID1_A.CDF	1/9/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2156441_FID1_A.CDF	1/10/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2156735_FID1_A.CDF	1/11/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2156985_FID1_A.CDF	1/12/2017	4:30	0.0	0.0	347,822.004	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2157263_FID1_A.CDF	1/13/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2157971_FID1_A.CDF	1/16/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2158227_FID1_A.CDF	1/17/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2158511_FID1_A.CDF	1/18/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2158782_FID1_A.CDF	1/19/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2159060_FID1_A.CDF	1/20/2017	4:30 10:42	0.0	0.0	347,822.007 347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2160236_FID1_A.CDF	1/24/2017	4:30	0.4	0.0	347,821.854	0.9
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2160073_FID1_A.CDF	1/25/2017	4:30	0.1	0.3	347,821.981	0.9
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2160607_FID1_A.CDF	1/26/2017	4:30	0.0	0.0	347,822,007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2160894_FID1_A.CDF	1/27/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2161579 FID1 A.CDF	1/30/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2161820_FID1_A.CDF	1/31/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2162093_FID1_A.CDF	2/1/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2162412_FID1_A.CDF	2/2/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	\$2162678_FID1_A.CDF	2/3/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2163414_FID1_A.CDF	2/6/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2163672_FID1_A.CDF	2/7/2017	4:30 4:30	0.0	0.0	347,822.007	
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX C5/C6 ISOM PENEX	S2163968_FID1_A.CDF S2164223_FID1_A.CDF	2/8/2017 2/9/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2164502_FID1_A.CDF	2/10/2017	4:30	0.0	0.0	347,822.007 347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2164868 FID1 A.CDF	2/11/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2165202 FID1_A.CDF	2/13/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2165448_FID1_A.CDF	2/14/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2165720_FID1_A.CDF	2/15/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2165957_FID1_A.CDF	2/16/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2166242_FID1_A.CDF	2/17/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2166929_FID1_A.CDF	2/20/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2167214_FID1_A.CDF	2/21/2017 2/22/2017	4:30 4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX C5/C6 ISOM PENEX	C5/C6 ISOM PENEX C5/C6 ISOM PENEX	S2167497_FID1_A.CDF S2167762_FID1_A.CDF	2/23/2017	4:30	0.0	0.0	347,822.007 347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2168075 FID1 A.CDF	2/24/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2168766 FID1 A.CDF	2/27/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2169022 FID1 A.CDF	2/28/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2169338_FID1_A.CDF	3/1/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2169592_FID1_A.CDF	3/2/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2169873_FID1_A.CDF	3/3/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2170613_FID1_A.CDF	3/6/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2170865_FID1_A.CDF	3/7/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX C5/C6 ISOM PENEX	S2171163_FID1_A.CDF	3/8/2017 3/9/2017	4:30 4:30	0.0 0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2171407_FID1_A.CDF	3/10/2017	4:30	0.0	0.0	347,822.007 347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	\$2171005_FID1_A.CDF	3/13/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2172624_FID1_A.CDF	3/14/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2172896_FID1_A.CDF	3/15/2017	4:30	0,0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2173165_FID1_A.CDF	3/16/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2173444_FID1_A.CDF	3/17/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2174130_FID1_A.CDF	3/20/2017	4:30	1.1	0.8	347,821.616	2.3
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2174367_FID1_A.CDF	3/21/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2174637_FID1_A.CDF	3/22/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2175160_FID1_A.CDF	3/24/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX C5/C6 ISOM PENEX	C5/C6 ISOM PENEX C5/C6 ISOM PENEX	S2175872_FID1_A.CDF S2176104_FID1_A.CDF	3/27/2017 3/28/2017	4:30 4:30	0.0	0.0	347,822.007 347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2176104_FID1_A.CDF	3/29/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	\$2176593 FID1_A.CDF	3/30/2017	4:30	0.0	0.0	347,822.007	0.0
C5/C6 ISOM PENEX	C5/C6 ISOM PENEX	S2176846_FID1_A.CDF	3/31/2017	4:30	0.0	0.0	347,822.007	0.0
CO/CO IOCIVI FEINEN								

				ky Feed - (Unit 50: ni-annually with a mi	nimum of three me	onths between sam	nples		T 100 C
Unit Name	Code Name	Sample ID	Sample Date	Sample Time	Total sulfur-Ante	k Instrument ID	Vol H2S	Vol LPG	H2S Co (ppmv
HF ALKYLATION	ALKY FEED	S2154422.D	1/2/2017	4:30	(ppmw) 1.8	Antek#1	1.3	446,129.772	2.8
HF ALKYLATION	ALKY FEED	S2154422.D		4:30	1.9	Antek#1	1.3	446,129.736	3.0
	ALKY FEED	52154639.D	1/3/2017		1.7			446,129.799	2.8
HF ALKYLATION			1/4/2017	4:30		Antek#1 Antek#2	1.2		
	ALKY FEED	52155193.D	1/5/2017	4:30	1.3		1.0	446,129.964	2.2
HF ALKYLATION	ALKY FEED	\$2155448.D	1/6/2017	4:30	0.8	Antek#2	0.6	446,130.214	1.3
HF ALKYLATION	ALKY FEED	S2155692.D	1/7/2017	4:30	3.1	Antek#1	2.2	446,129.196	4.9
HF ALKYLATION	ALKY FEED	S2155902.D	1/8/2017	4:30	1.4	Antek#2	1.0	446,129.919	2.3
HF ALKYLATION	ALKY FEED	S2156165.D	1/9/2017	4:30	1.4	Antek#2	1.0	446,129.933	2.3
HF ALKYLATION	ALKY FEED	S2156429.D	1/10/2017	4:30	1.7	Antek#2	1.2	446,129.821	2.7
HF ALKYLATION	ALKY FEED	S2156715.D	1/11/2017	4:30	2.2	Antek#2	1.6	446,129.585	3.5
HF ALKYLATION	ALKY FEED	S2156970.D	1/12/2017	4:30	1.6	Antek#2	1.2	446,129.843	2.6
HF ALKYLATION	ALKY FEED	S2157244.D	1/13/2017	4:30	2.9	Antek#1	2.1	446,129.277	4.6
IF ALKYLATION	ALKY FEED	S2157484.D	1/14/2017	4:30	1.8	Antek#2	1.3	446,129.741	3.0
HF ALKYLATION	ALKY FEED	S2157696.D	1/15/2017	4:30	1.7	Antek#2	1.2	446,129.790	2.8
IF ALKYLATION	ALKY FEED	S2157951.D	1/16/2017	4:30	1.6	Antek#2	1.1	446,129.870	2.5
IF ALKYLATION	ALKY FEED	\$2158215.D	1/17/2017	4:30	1.4	Antek#2	1.0	446,129.924	2.3
HF ALKYLATION	ALKY FEED	S2158491.D	1/18/2017	4:30	2.0	Antek#2	1.5	446,129.660	3.3
HF ALKYLATION	ALKY FEED	S2158767.D	1/19/2017	4:30	6.8	Antek#1	4.9	446,127.510	11.0
HF ALKYLATION	ALKY FEED	S2159041.D	1/20/2017	4:30	1.3	Antek#2	1.0	446,129.964	2.2
IF ALKYLATION	ALKY FEED	S2159302.D	1/21/2017	4:30	1.5	Antek#2	1.1	446,129.892	2.4
IF ALKYLATION	ALKY FEED	S2159531.D	1/22/2017	4:30	1.3	Antek#2	0.9	446,129.991	2.1
HF ALKYLATION	ALKY FEED	S2159807.D	1/23/2017	4:30	0.5	Antek#1	0.4	446,130.330	0.8
IF ALKYLATION	ALKY FEED	52160061.D	1/24/2017	4:30	1.8	Antek#1	1.3	446,129.759	2.9
IF ALKYLATION	ALKY FEED	52160340.D	1/25/2017	4:30	1.7	Antek#1	1.3	446,129.808	2.7
	t	52160602.D		4:30	3.9	Antek#1	2.8	446,129.808	6.3
IF ALKYLATION	ALKY FEED		1/26/2017						
IF ALKYLATION	ALKY FEED	\$2160875.D	1/27/2017	4.30	3.8	Antek#2	2.7	446,128.880	6.1
IF ALKYLATION	ALKY FEED	S2161093.D	1/28/2017	4:30	4.7	Antek#1	3.4	446,128.456	7.6
IF ALKYLATION	ALKY FEED	\$2161309.D	1/29/2017	4:30	2.9	Antek#1	2.1	446,129.263	4.7
IF ALKYLATION	ALKY FEED	S2161559.D	1/30/2017	4:30	5.2	Antek#1	3.7	446,128.264	8,3
IF ALKYLATION	ALKY FEED	S2161808.D	1/31/2017	4:30	4.1	Antek#1	2.9	446,128.746	6.5
IF ALKYLATION	ALKY FEED	S2162073.D	2/1/2017	4:30	3.7	Antek#2	2.6	446,128.929	5.9
IF ALKYLATION	ALKY FEED	S2162397.D	2/2/2017	4:30	2.7	Antek#2	2.0	446,129.348	4,4
F ALKYLATION	ALKY FEED	S2162659.D	2/3/2017	4:30	2.3	Antek#2	1.6	446,129.540	3.7
IF ALKYLATION	ALKY FEED	S2162915.D	2/4/2017	4:30	1.9	Antek#1	1.3	446,129.727	3.0
IF ALKYLATION	ALKY FEED	S2163124.D	2/5/2017	4:30	1.5	Antek#2	1.1	446,129.901	2.4
IF ALKYLATION	ALKY FEED	S2163394.D	2/6/2017	4:30	1.4	Antek#2	1.0	446,129.955	2.2
IF ALKYLATION	ALKY FEED	S2163660.D	2/7/2017	4:30	1.2	Antek#1	0.8	446,130.035	1.9
IF ALKYLATION	ALKY FEED	S2163948.D	2/8/2017	4:30	1.5	Antek#1	1.1	446,129.875	2.5
IF ALKYLATION	ALKY FEED	S2164427.D	2/9/2017	22:54	1.1	Antek#1	0.8	446,130.084	1.7
IF ALKYLATION	ALKY FEED	S2164208.D	2/9/2017	4:30	1.5	Antek#2	1.1	446,129.879	2.5
IF ALKYLATION	ALKY FEED	S2164483.D	2/10/2017	4:30	1.1	Antek#1	0.8	446,130.071	1.8
IF ALKYLATION	ALKY FEED	S2164727.D	2/11/2017	4:30	1.2	Antek#2	0.8	446,130.035	1.9
IF ALKYLATION	ALKY FEED	S2164930.D	2/12/2017	4:30	1.2	Antek#1	0.9	446,130.031	1.9
IF ALKYLATION	ALKY FEED	S2165182.D	2/13/2017	4:30	1.2	Antek#1	0.8	446,130.049	1.9
IF ALKYLATION	ALKY FEED	S2165436.D	2/14/2017	4:30	1.0	Antek#2	0.7	446,130.107	1.6
IF ALKYLATION	ALKY FEED	S2165700.D	2/15/2017	4:30	1.7	Antek#2	1.2	446,129.808	2.7
IF ALKYLATION	ALKY FEED	\$2165942.D	2/16/2017	4:30	1.1	Antek#1	0.8	446,130.084	1.7
IF ALKYLATION	ALKY FEED	S2166223.D	2/17/2017	4:30	1.0	Antek#1	0.7	446,130.138	1.5
IF ALKYLATION	ALKY FEED	52166452.D	2/18/2017	4:30	1.3	Antek#2	0.9	446,129.977	2.1
IF ALKYLATION	ALKY FEED	S2166657.D	2/19/2017	4:30	0.8	Antek#2	0.6	446,130.218	1.2
IF ALKYLATION	ALKY FEED	S2166909.D	2/20/2017	4:30	0.8	Antek#2	0.6	446,130.196	1.3
IF ALKYLATION	ALKY FEED	S2167747.D	2/23/2017	4:30	1.5	Antek#1	1.0	446,129.910	2.3
IF ALKYLATION	ALKY FEED	S2168056.D		4:30	1.0	Antek#1	0.7	446,130.133	1.5
IF ALKYLATION	ALKY FEED	· · · · · · · · · · · · · · · · · · ·	2/24/2017	4:30			1.1	446,130.133	2.4
	ALKY FEED	S2168283.D	2/25/2017		1.5	Antek#1 Antek#1			+
IF ALKYLATION		S2168498.D	2/26/2017	4:30	0.9		0.6	446,130.160	1.4
IF ALKYLATION	ALKY FEED	52168746.D	2/27/2017	4:30	1.0	Antek#2	0.7	446,130.138	1.5
IF ALKYLATION	ALKY FEED	S2169010.D	2/28/2017	4:30	1.1	Antek#1	0.8	446,130.089	1.7
IF ALKYLATION	ALKY FEED	S2169318.D	3/1/2017	4:30	0.9	Antek#1	0.7	446,130.156	1.5
IF ALKYLATION	ALKY FEED	\$2169577.D	3/2/2017	4:30	1.2	Antek#2	0.9	446,130.031	1.9
IF ALKYLATION	ALKY FEED	52169854.D	3/3/2017	4:30	1.5	Antek#1	1.1	446,129.888	2.4
IF ALKYLATION	ALKY FEED	52170099.D	3/4/2017	4:30	1.5	Antek#1	1.0	446,129.910	2.3
IF ALKYLATION	ALKY FEED	52170310.D	3/5/2017	4:30	1.1	Antek#1	0.8	446,130.080	1.7
IF ALKYLATION	ALKY FEED	S2170593.D	3/6/2017	4:30	0.9	Antek#2	0.7	446,130.147	1.5
IF ALKYLATION	ALKY FEED	S2170854.D	3/7/2017	4:30	1.0	Antek#2	0.7	446,130.120	1.6
IF ALKYLATION	ALKY FEED	S2171144.D	3/8/2017	4:30	1.1	Antek#1	0.8	446,130,075	1.8
F ALKYLATION	ALKY FEED	S2171393.D	3/9/2017	4:30	1.1	Antek#1	0.8	446,130.058	1.8
F ALKYLATION	ALKY FEED	\$2171647.D	3/10/2017	4:30	1.3	Antek#1	0.9	446,130.004	2.0
IF ALKYLATION	ALKY FEED	52171894.D	3/11/2017	4:30	1.3	Antek#1	0.9	446,129.995	2.0
IF ALKYLATION	ALKY FEED	S2172105.D	3/12/2017	4:30	1.1	Antek#1	0.8	446,130.075	1.8
IF ALKYLATION	ALKY FEED	S2172359.D	3/13/2017	4:30	0.3	Antek#2	0.2	446,130.437	0.5
IF ALKYLATION	ALKY FEED	S2172613.D	3/14/2017	4:30	1.0	Antek#1	0.7	446,130.116	1.6
F ALKYLATION	ALKY FEED	\$2172877.D	3/15/2017	4:30	1.5	Antek#2	1.1	446,129.901	2.4
F ALKYLATION	ALKY FEED	S2173151.D	3/16/2017	4:30	1.1	Antek#2	0.8	446,130.071	1.8
F ALKYLATION	ALKY FEED	S2173426.D	3/17/2017	4:30	0.9	Antek#1	0.6	446,130.178	1.4
HF ALKYLATION	ALKY FEED	S2173655.D	3/18/2017	4:30	1.2	Antek#1	0.9	446,130.017	2.0
F ALKYLATION	ALKY FEED	52173866.D	3/19/2017	4:30	0.8	Antek#1	0.6	446,130.191	1.5
IF ALKYLATION	ALKY FEED	S2174111.D	3/20/2017	4:30	0.9	Antek#1	0.6	446,130.160	1.4
HE ALKYLATION	ALKY FEED	\$2174356.D	3/21/2017	4:30	0.7	Antek#2	0.5	446,130.249	1.3
HF ALKYLATION	ALKY FEED	S2174618.D	3/22/2017	4:30	0.7	Antek#1	0.5	446,130.240	1.2
HF ALKYLATION	ALKY FEED	S2174873.D	3/23/2017	4:30	0.7	Antek#2	0.5	446,130.236	1.2
HF ALKYLATION	ALKY FEED	S2175142.D	3/24/2017	4:30	0.8	Antek#2	0.6	446,130.200	1.3
IF ALKYLATION	ALKY FEED ALKY FEED	S2175394.D S2175612.D	3/25/2017 3/26/2017	4:30 4:30	0.8	Antek#1 Antek#1	1.6 0.6	446,129.594 446,130.214	3.5
F ALKYLATION									

Dreager Tube Sampling AMP Sample Point #5 - Isom Make-up Hydrogen

Note: Monitoring Requirement - Must take at least one sample semi-annually with a minimum of three months between samples.

			Result		
1	Date	Time (hrs)	(ppm H2S)	Comments	Sampler
1	1/2/2017	7:53	0		YI8
	2/6/2017	8:24	0		BXA
1	3/6/2017	7:44	0		BXA

Dreager Tube Sampling AMP Sample Point #6 - PSA Offgas

Note: Monitoring Requirement - Must take at least one sample semi-annually with a minimum of three months between samples

		Result		
Date	Time	(ppm H2S)	Comments	Sample
1/3/2017	7:49	0		CZ8
2/6/2017	9:33	0		E3C
3/6/2017	11:28	0		IFG

Appendix B Quarterly CGA Results



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	2-AI-103	Calender Quarter:	FIRST
Unit:	#2 CRUDE	Analyzer Span:	0 - 10%
Component:	OXYGEN (O ₂)	Serial Number:	3.246580.2
Date:	Monday, January 09, 2017	Technician:	BRYAN WINN
Start Time:	11:02	End Time:	12:19

Cylinder Gas Pressure Values

Cylind	ler Pressure (Start)
Low Range	1695
High Range	1550

Cylind	er Pressure (End)
Low Range	1690
High Range	1545

Cylinder Gas Information					
	Low Calibration Gas	High Calibration Gas			
Cylinder Certification Number:	CC171855	CC174008			
Cylinder Certification Date:	5/6/2010	2/17/2011			
Cylinder Expiration Date:	5/6/2018	2/17/2019			
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One			
Concentration (ppm or % Ca):	5.162	9.998			

Calibration	Sas Audit Results	
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	4.39	8.50
Range of Allowance (±15%) High	5.94	11.50
Test Run #1	5.12	9.95
Test Run #2	5.12	9.95
Test Run #3	5.12	9.95
Average Result (Cm)	5.12	9.95
Accuracy (%)	-0.81	-0.48
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results		

TEST WAS SUCCESSFUL!

Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	2-AI-104	Calender Quarter:	FIRST
Unit:	#2 CRUDE	Analyzer Span:	0 - 100 PPM
Component:	OXIDES OF NITROGEN (NO _X)	Serial Number:	3.246579.2
Date:	Monday, January 09, 2017	Technician:	BRYAN WINN
Start Time:	11:02	End Time:	12:19

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range 1895		
High Range 1505		

Cylinder Pressure (End)		
Low Range	1895	
High Range	1505	

Cylinder Gas Information			
Low Calibration Gas High Calibration Gas			
Cylinder Certification Number:	CC402777	XC024745B	
Cylinder Certification Date:	7/1/2014	2/21/2011	
Cylinder Expiration Date:	7/1/2017	2/21/2019	
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One	
Concentration (ppm or % Ca):	24.9	54.4	

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	21.12	46.24
Range of Allowance (±15%) High	28.58	62.56
Test Run #1	23.42	52.24
Test Run #2	23.41	52.18
Test Run #3	23.41	52.24
Average Result (Cm)	23.41	52.22
Accuracy (%)	-5.78	-4.01
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results		· · · · · · · · · · · · · · · · · · ·

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	32-AI-250	Calender Quarter:	FIRST
Unit:	HDH	Analyzer Span:	0 - 10%
Component:	OXYGEN (O ₂)	Serial Number:	3.346624.7
Date:	Monday, January 09, 2017	Technician:	JACOB PAZUREK
Start Time:	10:59	End Time:	12:15

Cylinder Gas Pressure Values

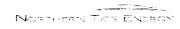
Cylinder Pressure (Start)		
Low Range 1720		
High Range 1670		

Cylinder Pressure (End)		
Low Range	1715	
High Range	1665	

Cylinder Gas Information			
Low Calibration Gas High Calibration Gas			
Cylinder Certification Number:	CC327623	CC337712	
Cylinder Certification Date:	2/4/2011	2/3/2011	
Cylinder Expiration Date:	2/4/2019	2/3/2019	
Type of Cylinder Certification: EPA Protocol One EPA Protocol One			
Concentration (ppm or % Ca):	5.023	10.000	

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	4.27	8.50
Range of Allowance (±15%) High	5.78	11.50
Test Run #1	5.03	10.03
Test Run #2	5.02	10.03
Test Run #3	5.02	10.03
Average Result (Cm)	5.02	10.03
Accuracy (%)	0.00	0.29
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results		

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	32-AI-251	Calender Quarter:	FIRST
Unit:	HDH	Analyzer Span:	0 - 100 PPM
Component:	OXIDES OF NITROGEN (NO _X)	Serial Number:	3.346654.7
Date:	Monday, January 09, 2017	Technician:	JACOB PAZUREK
Start Time:	10:59	End Time:	12:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range	1810	
High Range	1570	

Cylinder Pressure (End)		
Low Range	1805	
High Range	1565	

Cylinder Gas Information		
Low Calibration Gas High Calibration G		
Cylinder Certification Number:	CC48525	CC400311
Cylinder Certification Date:	3/20/2015	7/10/2013
Cylinder Expiration Date:	3/20/2018	7/10/2021
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	25.00	57.71

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	21.25	49.05
Range of Allowance (±15%) High	28.75	66.37
Test Run #1	25.22	58.19
Test Run #2	25.28	58.19
Test Run #3	25.32	58.09
Average Result (Cm)	25.28	58.15
Accuracy (%)	1.10	0.77
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results		

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	42-AI-3	Calender Quarter:	FIRST
Unit:	#3 SRU	Analyzer Span:	0 - 500 PPM
Component:	SULFUR DIOXIDE (SO ₂)	Serial Number:	3.245249.3
Date:	Tuesday, January 10, 2017	Technician:	BRYAN WINN
Start Time:	13:01	End Time:	14:20

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range	1700	
High Range	1910	

Cylinder Pressure (End)	
Low Range	1695
High Range	1900

Cylinder Gas Information		
Low Calibration Gas High Calibration G		
Cylinder Certification Number:	CC175894	CC357324
Cylinder Certification Date:	3/3/2011	3/31/2014
Cylinder Expiration Date:	3/3/2019	3/31/2022
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	128.5	280.1

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	109.23	238.09
Range of Allowance (±15%) High	147.78	322.12
Test Run #1	128.97	278.23
Test Run #2	128.98	278.93
Test Run #3	129.08	278.88
Average Result (Cm)	129.01	278.68
Accuracy (%)	0.40	-0.51
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results		

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	42-AI-4	Calender Quarter:	FIRST
Unit:	#3 SRU	Analyzer Span:	0 - 25%
Component:	OXYGEN (O ₂)	Serial Number:	3.245244.3
Date:	Tuesday, January 10, 2017	Technician:	BRYAN WINN
Start Time:	13:01	End Time:	14:20

Cylinder Gas Pressure Values

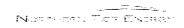
Cylinder Pressure (Start)		
Low Range	1900	
High Range	1700	

Cylinder Pressure (End)	
Low Range	1900
High Range	1700

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC247661	CC335268
Cylinder Certification Date:	3/27/2014	2/11/2011
Cylinder Expiration Date:	3/27/2022	2/11/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	4.967	9.521

Calibration Gas Audit Results			
Low Cal Gas High Cal Gas			
Range of Allowance (±15%) Low	4.22	8.09	
Range of Allowance (±15%) High	5.71	10.95	
Test Run #1	4.99	9.46	
Test Run #2	4.99	9.47	
Test Run #3	5.00	9.48	
Average Result (Cm)	4.99	9.47	
Accuracy (%)	0.53	-0.54	
Allowable Accuracy Error (%)	± 15%	± 15%	
Test Results			

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	31-AI-1A	Calender Quarter:	FIRST	
	#2 SRU	Analyzer Span:	0 - 25%	
Component:	OXYGEN (O ₂)	Serial Number:	C149549	
Date:	Tuesday, January 10, 2017	Technician:	JACOB PAZUREK	
Start Time:	13:17	End Time:	-	13:54

Cylinder Gas Pressure Values

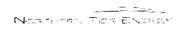
Cylinder Pressure (Start)		
Low Range	1110	
High Range	1220	

Cylinder Pressure (End)		
Low Range	1090	
High Range	1190	

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC37936	CC175979
Cylinder Certification Date:	7/5/2011	7/7/2011
Cylinder Expiration Date:	7/5/2019	7/7/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	5.122	10.070

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	4.35	8.56
Range of Allowance (±15%) High	5.89	11.58
Test Run #1	5.15	10.15
Test Run #2	5.15	10.15
Test Run #3	5.15	10.15
Average Result (Cm)	5.15	10.15
Accuracy (%)	0.50	0.81
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	1.00	

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	31-Al-1B	Calender Quarter:	FIRST
Unit:	#2 SRU	Analyzer Span:	0 - 500 PPM
Component:	SULFUR DIOXIDE (SO ₂)	Serial Number:	6981
Date:	Tuesday, January 10, 2017	Technician:	JACOB PAZUREK
Start Time:	13:17	End Time:	13:54

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range	1110	
High Range	1220	

Cylinder Pressure (End)		
Low Range	1090	
High Range	1190	

Cylinder Gas Information			
	Low Calibration Gas	High Calibration Gas	
Cylinder Certification Number:	CC37936	CC175979	
Cylinder Certification Date:	7/5/2011	7/7/2011	
Cylinder Expiration Date:	7/5/2019	7/7/2019	
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One	
Concentration (ppm or % Ca):	127.000	279.500	

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	107.95	237.58
Range of Allowance (±15%) High	146.05	321.43
Test Run #1	121.81	276.66
Test Run #2	123.47	276.55
Test Run #3	122.77	276.71
Average Result (Cm)	122.68	276.64
Accuracy (%)	-3.40	-1.02
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results	<u> </u>	

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	08-AI-0030A	Calender Quarter:	FIRST
Unit:	8-B-1	Analyzer Span:	0 - 15%
Component:	OXYGEN (O ₂)	Serial Number:	3.359909.2
Date:	Wednesday, January 11, 2017	Technician:	BRYAN WINN
Start Time:	13:56	End Time:	15:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)			
Low Range 1700			
High Range 1600			

Cylinder Pressure (End)			
Low Range	1695		
High Range 1595			

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	SG9169569BAL	EB0020125
Cylinder Certification Date:	7/1/2013	10/7/2011
Cylinder Expiration Date:	7/1/2021	10/7/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	5.002	10.010

Calibration Gas Audit Results			
Low Cal Gas High Cal Ga			
Range of Allowance (±15%) Low	4.25	8.51	
Range of Allowance (±15%) High	5.75	11.51	
Test Run #1	5.00	10.01	
Test Run #2	5.00	10.01	
Test Run #3	5.00	10.01	
Average Result (Cm)	5.00	10.01	
Accuracy (%)	-0.04	0.00	
Allowable Accuracy Error (%)	± 15%	± 15%	
Test Results			

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	08-AI-0030B	Calender Quarter:	FIRST
Unit:	8-B-1	Analyzer Span:	0 - 100 PPM
Component:	OXIDES OF NITROGEN (NO _X)	Serial Number:	3.359841-2
Date:	Wednesday, January 11, 2017	Technician:	BRYAN WINN
Start Time:	13:56	End Time:	15:15

Cylinder Gas Pressure Values

Cylinder Pressure (Start)	
Low Range	2100
High Range	1600

Cylinder Pressure (End)		
Low Range	2095	
High Range	1595	

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC323462	XC024745B
Cylinder Certification Date:	3/28/2016	2/21/2011
Cylinder Expiration Date:	3/28/2019	2/21/2019
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	25.34	54.45

Calibration Gas Audit Results		
	Low Cal Gas	High Cal Gas
Range of Allowance (±15%) Low	21.54	46.28
Range of Allowance (±15%) High	29.14	62.62
Test Run #1	25.14	53.29
Test Run #2	25.37	53.62
Test Run #3	25.31	53.18
Average Result (Cm)	25.27	53.36
Accuracy (%)	-0.26	-2.00
Allowable Accuracy Error (%)	± 15%	± 15%
Test Results		

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	7-AI-205	Calender Quarter:	FIRST
Unit:	VRU	Analyzer Span:	0 - 5%
Component:	PROPANE (C ₃ H ₈)	Serial Number:	ERFH-0934
Date:	Tuesday, January 17, 2017	Technician:	JACOB PAZUREK
Start Time:	14:13	End Time:	14:34

Cylinder Gas Pressure Values

Cylinder Pressure (Start)			
Low Range 1390			
High Range 1290			

Cylinder Pressure (End)		
Low Range	1380	
High Range	1280	

Cylinder Gas Information				
	Low Calibration Gas	High Calibration Gas		
Cylinder Certification Number:	SG9160857BAL	LCCOSA10333		
Cylinder Certification Date:	3/24/2014	6/22/2011		
Cylinder Expiration Date:	3/24/2022	6/22/2019		
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One		
Concentration (ppm or % Ca):	1.36	2.63		

Calibration Gas Audit Results						
Low Cal Gas High Cal Ga						
Range of Allowance (±15%) Low	1.16	2.23				
Range of Allowance (±15%) High	1.57	3.02				
Test Run #1	1.53	2.30				
Test Run #2	1.53	2.44				
Test Run #3	1.53	2.37				
Average Result (Cm)	1.53	2.37				
Accuracy (%)	11.85	-9.80				
Allowable Accuracy Error (%)	± 15%	± 15%				
Test Results						

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	14-AI-106	Calender Quarter:	FIRST
Unit:	WASTE WATER	Analyzer Span:	0 - 300 PPM
Component:	HYDROGEN SULFIDE (H₂S)	Serial Number:	H004440001
Date:	Wednesday, January 18, 2017	Technician:	BRYAN WINN
Start Time:	12:52	End Time:	13:28

Cylinder Gas Pressure Values

Cylinder Pressure (Start)			
Low Range 1925			
High Range	1980		

Cylinder Pressure (End)		
Low Range	1920	
High Range	1975	

Cylinder Gas Information						
Low Calibration Gas High Calibration Gas						
Cylinder Certification Number:	CC330083	CC159459				
Cylinder Certification Date:	2/11/2015	2/16/2015				
Cylinder Expiration Date:	2/11/2018	2/16/2018				
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One				
Concentration (ppm or % Ca):	75.3	167.9				

Calibration Gas Audit Results					
Low Cal Gas Hig					
Range of Allowance (±15%) Low	64.01	142.72			
Range of Allowance (±15%) High	86.60	193.09			
Test Run #1	72.15	169.20			
Test Run #2	71.16	172.00			
Test Run #3	71.45	172.10			
Average Result (Cm)	71.59	171.10			
Accuracy (%)	-4.93	1.91			
Allowable Accuracy Error (%)	± 15%	± 15%			
Test Results					

TEST WAS SUCCESSFUL!

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Saint Paul Park Refinery Opacity Audit Saint Paul Park, MN

Tag #: Unit:	8-AI-3A	Filter Certification Date:	December 5, 2016
	FCC	Note: Cert. date must	be no later than 6 months of test
Date:	Tuesday, January 24, 2017	Instrument Serial No:	440-A-6000044023-B21/423
Technician:	BRYAN WINN	Monitor Pathlength	60.125"
Start Time:	13:03	Outlet Pathlength:	60.125"
End Time:	14:38	Pathlength Corrected:	No

Calibrated Neutral Density Filter Values

Actual Optical Density Filter Values			
Low Range 13.34			
Mid Range	20.11		
High Range	34.17		

Adjusted Optical Density Filter Values				
Low Range N/A				
Mid Range	N/A			
High Range	N/A			

	Opacity Audit Readings					
Run Number	Range	Calibration Filter	Instrument Reading	Arithmet	ic Values (C	
		(%Ca)	(%Cm)	Low	Mid	High
1-1	Low	13.34	15.03	-1.69	>><	\mathbb{X}
1-2	Mid	20.11	21.75		-1.64	$>\!\!<$
1-3	High	34.17	35.1		\sim	-0.93
2-1	Low	13.34	14.51	-1.17	\sim	$>\!\!<$
2-2	Mid	20.11	20.57		-0.46	> <
2-3	High	34.17	35.28			-1.11
3-1	Low	13.34	15.03	-1.69	> <	$>\!\!<$
3-2	Mid	20.11	21.76		-1.65	$>\!\!<$
3-3	High	34.17	35.44			-1.27
4-1	Low	13.34	15.74	-2.40	\sim	$>\!\!<$
4-2	Mid	20.11	21.76		-1.65	$>\!\!<$
4-3	High	34.17	34.61			-0.44
5-1	Low	13.34	15.58	-2.24		$>\!\!<$
5-2	Mid	20.11	21.75	\triangleright	-1.64	$>\!\!<$
5-3	High	34.17	35.44			-1.27

Opacity Audit Results					
Low Mid High					
Arithmetic Mean	-1.84	-1.41	-1.00		
Standard Deviation	0.49	0.53	0.35		
Confidence Coefficient	0.61	0.66	0.43		
Calibration Error (%)	2.45	2.07	1.43		
Allowable Calibration Error (%)	≤ 3%	≤ 3%	≤ 3%		
Test Results					

TEST WAS SUCCESSFUL!

NOTE: Test Method and Procedures can be referenced from Saint Paul Park Refining Company (SPPRC) Title V Permit and QA/QC Program per Minnesota State Rule 7017 Subpart (1).



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	11-AI-1	Calender Quarter:	FIRST
Unit:	REFORMER	Analyzer Span:	0 - 300 PPM
Component:	HYDROGEN SULFIDE (H₂S)	Serial Number:	G0024
Date:	Friday, February 03, 2017	Technician:	BRYAN WINN
Start Time:	8:36	End Time:	10:09

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range	1695	
High Range	1695	

Cylinder Pressure (End)		
Low Range	1690	
High Range	1690	

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC330083	CC159459
Cylinder Certification Date:	2/11/2015	2/13/2015
Cylinder Expiration Date:	2/11/2018	2/13/2018
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	75.3	167.9

Calibration Gas Audit Results				
Low Cal Gas High Cal Gas				
63.99	142.72			
86.57	193.09			
75.74	188.4			
76.45	187.7			
76.78	184.7			
76.32	186.93			
1.39	11.34			
± 15%	± 15%			
	Low Cal Gas 63.99 86.57 75.74 76.45 76.78 76.32 1.39			

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	14-Al-146	Calender Quarter:	FIRST
Unit:	FLARE	Analyzer Span:	0 - 300 PPM
Component:	HYDROGEN SULFIDE (H₂S)	Serial Number:	1060
Date:	Monday, February 06, 2017	Technician:	BRYAN WINN
Start Time:	15:25	End Time:	15:50

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range	1700	
High Range	1700	

Cylinder Pressure (End)		
Low Range 1695		
High Range 1695		

Cylinder Gas Information		
	Low Calibration Gas	High Calibration Gas
Cylinder Certification Number:	CC330083	CC159459
Cylinder Certification Date:	2/11/2015	2/16/2015
Cylinder Expiration Date:	2/11/2018	2/16/2018
Type of Cylinder Certification:	EPA Protocol One	EPA Protocol One
Concentration (ppm or % Ca):	75.3	167.9

Calibration Gas Audit Results				
Low Cal Gas High Cal Gas				
Range of Allowance (±15%) Low	64.01	142.72		
Range of Allowance (±15%) High	86.60	193.09		
Test Run #1	72.00	165.11		
Test Run #2	71.73	164.70		
Test Run #3	71.83	166.09		
Average Result (Cm)	71.85	165.30		
Accuracy (%)	-4.58	-1.55		
Allowable Accuracy Error (%)	± 15%	± 15%		
Test Results				

TEST WAS SUCCESSFUL!



Saint Paul Park Refinery Cal Gas Audit Saint Paul Park, MN

Tag #:	14-AI-147 - RANGE A	Calender Quarter:	FIRST
Unit:	FLARE	Analyzer Span:	0-5000 PPM
Component:	H ₂ S AS SULFUR DIOXIDE (SO ₂)	Serial Number:	SL-09790714
Date:	Monday, February 06, 2017	Technician:	BRYAN WINN
Start Time:	13:07	End Time:	14:11

Cylinder Gas Pressure Values

Cylinder Pressure (Start)		
Low Range	2175	
High Range	2045	

Cylinder Pressure (End)						
Low Range	2170					
High Range	2040					

Cylinder Gas Information				
	Low Calibration Gas	High Calibration Gas		
Cylinder Certification Number:	CC501425	CC467298		
Cylinder Certification Date:	5/20/2016	9/24/2015		
Cylinder Expiration Date:	5/20/2017	9/24/2018		
Type of Cylinder Certification:	Certified Standard- Spec	Certified Standard- Spec		
Concentration (ppm or % Ca):	1275.0	2782.0		

Calibration Gas Audit Results					
	Low Cal Gas	High Cal Gas			
Range of Allowance (±15%) Low	1083.75	2364.70			
Range of Allowance (±15%) High	1466.25	3199.30			
Test Run #1	1310.23	2862.12			
Test Run #2	1305.09	2878.52			
Test Run #3	1300.10	2897.39			
Average Result (Cm)	1305.14	2879.34			
Accuracy (%)	2.36	3.50			
Allowable Accuracy Error (%)	± 15%	± 15%			
Test Results					

TEST WAS SUCCESSFUL!



Opacity Certification Services, LLC

A Proud Veteran-Owned Business

Raleigh, North Carolina 27615 Phone 919.215.9384 Fax 919.846.6041

Web: www operative of Lesin

Results of NIST-Traceable Games Filter (Audit Attenuators) Certification

Customer: NTE St. Paul Park Refining Co.

Date of Certification:	The experience of the con-	Dooument No.	120516-02
Date of Expiration:	Note that the second of the second	Document 140.	120510-02

Filters (Attenuators) are certified in accordance with 40 CFR Part 60, Subpart B, "Performance Specification 1", as well as the most current ASTM D6216 standard and Opacity Procedure 3. Laboratory spectrophotometer is calibrated daily by use of NIST SRM2031b standard reference materials.

Spectrophotometer

	Spectrophotometer: Varian (HP) Cary	50 Conc	Serial Number: EL06023153	
[Scanning Range: 380-780nm	Data Interval	: 10nm	Spectral Bandpass: 1.5nm
Į	Maximum Accuracy: ± 0.100 Absolute	Opacity	Laboratory T	Temperature: 72° F (± 3°)/22° C (± 1°)

NIST Standard Reference Material (SRM)

SRM Type: NIST 2031b series	Serial Number: Blank; 709-10; 709-30; 709-90
SRM Date of Certification: January 27, 2015	SRM Date of Expiration: January 31, 2017

Opacity Monitor

Opacity Monitor Make/M	1odel:	Thermo 4	140 series	
Monitor Light Source:	Incano	lescent	Straight stack correction factor:	1.000
Angle of Incidence:	10 deg	rees	Correction factor (if given):	1.000

Open Filter Data		Set ID#: (-)				
Serial Number	Opacity	Transmittance	Optical Density	Previous Opacity	A Opacity	
Q05A	13.34%	86.66%	0.0622	13.28%	+0.06	
F43A	20.11%	79.89%	0.0975	20.11%	0.00	
F44A	34.17%	65.83%	0.1816	34.22%	-0.05	

Signature of Spectrophotometer Operator